

Electronic Version 1.2.8
 Stylesheet Version 1.0

SPECIFICATION



Apparatus, Systems and Methods for Online, Multi-Parcel, Multi-Carrier, Multi-Service Enterprise Parcel Shipping Management

Cross Reference to Related Applications

Priority is claimed to U.S. Provisional Patent Application, Serial No. 60/192,723 filed March 27, 2000, and U.S. Provisional Patent Application Serial No. 60/193,899 filed March 31, 2000, the disclosures of which are incorporated for all purposes herein by reference as if fully stated here. Reference is further made to [REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217] U.S. Patent Application Serial No.

_____ (attorney docket number PSTM0042/MRK Apparatus, Systems and Methods for Online, Multi-Parcel, Multi-Carrier, Multi-Service Parcel Returns Shipping Management) filed on even date herewith, the disclosure of which is incorporated for all purposes herein by reference as if fully stated here.

Field of Invention

[0001] The field of the present invention is computer systems for shipping management, and specifically online computer systems for enterprise parcel shipping management.

Background of Invention

[0002] Major corporations, small businesses and individuals (the Shipper(s)) ship billions of parcels every year. Each parcel carrier (the Carrier(s)) has its own unique rating schedule, delivery and pickup rules and schedules, and certification requirements.

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[0003] *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]* Many enterprise shipping departments (Enterprise Shippers) manually refer to a mixture of separate, individual paper-based and online systems (a non-integrated multiple standalone Carrier system environment) to determine the rate for shipping a particular parcel and to determine the optimal carrier with which to ship that particular parcel according to the constraints and requirements involved. With regard to shipping a particular parcel, Enterprise Shippers must consider a combination of factors, including but not limited to parcel dimensions, parcel weight, origin/ destination specifications, parcel value, parcel value loss protection, budgetary, timing, pickup, delivery, delivery notification, delivery service, and other service option constraints and requirements.

[0004] In a non-integrated multiple standalone Carrier system environment, effective comparison shopping across multiple carriers is generally difficult and time-consuming. Many enterprise shipping departments rely instead on one or two familiar Carriers rather than comparison shopping each parcel across multiple Carriers.

[0005] Once an enterprise shipping department employee (also Enterprise Shipper) selects a particular Carrier, the Enterprise Shipper must label the parcel with the information appropriate for the selected Carrier. In a non-integrated multiple standalone Carrier system environment, the Enterprise Shipper must interpret and apply a particular Carrier's rules and requirements in order to prepare the necessary manifest documents to ship a particular parcel.

[0006] An Enterprise Shipper that deals with a particular Carrier on a recurring basis may set up an account with the particular Carrier (Enterprise Account-Holder Shippers). Some Carriers provide Enterprise Account-Holder Shippers with a copy of that Carrier's software system if one exists. Each individual Carrier's software system has its own unique look and feel.

[0007] Rather than learn multiple standalone Carrier systems, some Enterprise Shippers choose instead to rely on a manual system, including the manual preparation of parcel labels; some develop a dependency on a single Carrier-provided system even though such a policy often results in non-optimal shipping costs.

[0008] [REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]

Summary of Invention

- [0009] [REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217] The present invention provides a plurality of Enterprises with a single online user interface with which the Enterprise can provide Enterprise Shippers, shipping origination users and shipping intermediary users with an automated parcel management system for a plurality of supported Carriers for a plurality of services.
- [0010] [REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217] The System prompts each user to input information about a package to be shipped and to input information about how the user wants the package to be shipped. Each parcel to be shipped is characterized by a set of package criteria. Each shipping request is characterized by a set of parcel shipping criteria.
- [0011] [REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217] The System provides Enterprise Shippers with an online display comparison of multiple services offered by multiple carriers for a particular parcel from which the lowest cost or fastest delivery Carrier and Service can be selected by, or dictated to, origination and/or intermediary shippers. In one embodiment of the invention, the online display comparison is in the form of an expandable and contractible array. The user places a shipping order by selecting an entry from the comparison array (also referred to herein as the "Grid").
- [0012] The System generates an internal system tracking number for the shipping order, and saves the internal system tracking number for the shipping order in a database.
- [0013] The System generates a graphic representation of a shipping label corresponding to a particular shipping order and displays the graphic representation of the shipping label on a display monitor connected to a computer accessible by the user.

- [0014] The System generates a set of printable shipping label data in response to a shipping label print request by a user and sends the set of printable shipping label data to a printer connected to the computer accessible by the user.
- [0015] Each shipping order with a tracking number is characterized by a shipping status. The System generates a tracking report record depicting the shipping status of a shipping order in response to a user tracking report request for the shipping order.
- [0016] The System increases user productivity with an easy to understand, wizard-like, browser-based interface featuring, among other things, personal *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]* address books, shipping history with integrated tracking, common User Interface across multiple carriers, desktop label printing, shipment pre-processing, and in some embodiments, completion of international shipment documentation requirements.
- [0017] *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]* The total cost of ownership is low in that the preferred embodiment of the invention uses an ASP (Application Service Provider) model that provides inexpensive centralized maintenance of Carriers and standard rates, and centralized administration of users and shipping policy logic.

[0018] *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*

Brief Description of Drawings

- [0019] These and other features of the present invention are more fully set forth in the following description of exemplary embodiments of the invention. The description is presented with reference to the accompanying drawings in which:
- [0020] FIG. 1 is a graphic representation depicting the interface relationships provided by the System of the present invention between origination shippers, intermediary shippers, Enterprise Shippers and Carriers;
- [0021] FIG. 2 is a graphic representation depicting an exemplary user computer configuration and the computer's interfaces with the System;

- [0022] FIG. 3 is a graphic representation of an exemplary configuration of the System, and relationships with Carriers and Enterprise users;
- [0023] FIG. 4 is a high level System component diagram depicting an exemplary System Architecture in an exemplary embodiment of the System in an Internet environment;
- [0024] FIG. 5 *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*;
- [0025] FIG. 6 *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*;
- [0026] FIG. 7 is a graphic representation depicting an exemplary Log On System Screen in an exemplary embodiment of the invention;
- [0027] FIGS. 8 through 11 are graphic representations of exemplary Password Recovery Screens in an exemplary embodiment of the invention;
- [0028] FIG. 12 is a graphic representation of an exemplary home page for an exemplary embodiment of the invention once an Enterprise User has successfully Logged On;
- [0029] FIG. 13 is a graphic representation of an exemplary Address Book List View Screen in an exemplary embodiment of the invention;
- [0030] FIG. 14 is a graphic representation of an exemplary Address Book Edit View Screen in an exemplary embodiment of the invention;
- [0031] FIG. 15 is a graphic representation of an exemplary Locations List View Screen in an exemplary embodiment of the invention;
- [0032] FIG. 16 is a graphic representation of an exemplary Preferences Summary Screen in an exemplary embodiment of the invention;
- [0033] FIG. 17 is a graphic representation of an exemplary Account Information Preferences Screen in an exemplary embodiment of the invention;
- [0034] FIG. 18 is a graphic representation of an exemplary Carrier Preferences Screen in an exemplary embodiment of the invention;

- [0035] FIG. 19 is a graphic representation of an exemplary Drop Off/Pickup Preferences Screen in an exemplary embodiment of the invention;
- [0036] FIG. 20 is a graphic representation of an exemplary Package Options Preferences Screen in an exemplary embodiment of the invention;
- [0037] FIG. 21 is a graphic representation of an exemplary Shipment Options Preferences Screen in an exemplary embodiment of the invention;
- [0038] FIG. 22 is a graphic representation of an exemplary Applications Preferences Screen in an exemplary embodiment of the invention;
- [0039] FIG. 23 is a graphic representation of an exemplary Payment Information Preferences Screen in an exemplary embodiment of the invention;
- [0040] FIG. 24 is a graphic representation of an exemplary Price It Start Page in an exemplary embodiment of the invention;
- [0041] FIG. 25 is a graphic representation of an exemplary Price It Shipping Estimate Screen in an exemplary embodiment of the invention;
- [0042] FIG. 26 is a graphic representation of an exemplary Drop Off Locator Screen in an exemplary embodiment of the invention;
- [0043] FIG. 27 is a graphic representation of an exemplary Shipping Addresses Screen in an exemplary embodiment of the invention;
- [0044] FIG. 28 is a graphic representation of an exemplary Shipping Payment Screen in an exemplary embodiment of the invention;
- [0045] FIG. 29 is a graphic representation of an exemplary Order History display for a particular Customer in a particular Merchant's Online store;
- [0046] FIGS. 30a through 30c are logic flow diagrams depicting an exemplary high level logic flow for a Consumer's experience with an exemplary embodiment of the Returns System of the present invention from within a Merchant's Online store;

- [0047] FIG. 31 is a graphic representation of an exemplary Order Summary Screen for a particular Order Number for a particular Consumer from within a particular Merchant's Online store in an exemplary embodiment of the invention;
- [0048] FIG. 32 is a graphic representation depicting an exemplary Returns Service Screen in an exemplary Merchant's Online store in an exemplary embodiment of the invention;
- [0049] FIG. 33 is a graphic representation of an exemplary Standard Policy Screen in an exemplary embodiment of the invention;
- [0050] FIG. 34 is a high level data and logic flow diagram depicting an overview flow of the Returns System flow in an exemplary embodiment of the invention;
- [0051] FIG. 35 is a high level data and logic relationship diagram depicting an exemplary Situation Response flow in an exemplary embodiment of the invention;
- [0052] FIG. 36 is a high level interactivity diagram depicting an exemplary embodiment of the interactivity of the Customer Returns Subsystem between a Consumer's Client Machine, Customer Returns Page, various Customer Returns Subsystem functions, and the Return System servers in an exemplary embodiment of the invention;
- [0053] FIG. 37 is a graphic representation of an exemplary Returns Service Return Reason Screen in an exemplary embodiment of the invention;
- [0054] FIG. 38 is a graphic representation of an exemplary Return Summary Screen in an exemplary embodiment of the invention;
- [0055] FIGS. 39a -39c are high level logic flow diagrams depicting control communications with client machine peripheral devices in an exemplary embodiment of the System in an Internet environment;
- [0056] FIG. 40 *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*;
- [0057] FIG. 41 is a graphic representation of an exemplary Shipping Options Screen in an exemplary embodiment of the invention;

- [0058] FIG. 42 is a graphic representation depicting an alternative exemplary embodiment of a dynamically dimensioned, multi-carrier, multi-service shipping rates comparison Graphic Array in an exemplary embodiment of the invention;
- [0059] FIGS. 43, 44a through 44b, and 45 are high level data retrieval logic flow diagrams depicting the data and high level logic that the system uses to calculate a shipping rate;
- [0060] FIGS. 46a through 46c are high level flow diagrams depicting the initial timing and rating logic to develop a dynamically dimensioned, multi-carrier, multi-service shipping rates comparison Graphic Array in an exemplary embodiment of the System in an Internet environment;
- [0061] FIG. 47 *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*;
- [0062] FIG. 48 *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*;
- [0063] FIG. 49 *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*;
- [0064] FIG. 50 *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*;
- [0065] FIG. 51 *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*;
- [0066] FIG. 52 is a graphic representation of an exemplary Shipping Label Display Screen in an exemplary embodiment of the invention;
- [0067] FIG. 53 is a high level flow diagram depicting an exemplary embodiment of Label Printing in an exemplary embodiment of the System in an Internet environment;
- [0068] FIG. 54 is a high level flow diagram depicting an exemplary embodiment of Image Printing in an exemplary embodiment of the System in an Internet environment;
- [0069] FIG. 55 is a high level System interactivity data and logic flow diagram depicting an exemplary embodiment of the process by which the System completes the information necessary to ship a package in an exemplary embodiment of the System using traveler labels delivered to a Shipping Station;

- [0070] FIG. 56 is a graphic representation depicting an exemplary Traveler Label in an exemplary embodiment of the invention;
- [0071] FIG. 57 is a graphic representation depicting an exemplary Shipping Request Confirmation Screen in an exemplary embodiment of the invention;
- [0072] FIG. 58 is a graphic representation of an exemplary Track It application Track a Shipment Screen in an exemplary embodiment of the invention;
- [0073] FIGS. 59 and 60 are graphic representations of an exemplary Tracking Results Screen in an exemplary embodiment of the invention;
- [0074] FIG. 61 is a graphic representation of an exemplary Unable to Track Screen in an exemplary embodiment of the invention;
- [0075] FIG. 62 is a graphic representation depicting an exemplary Tracking Information Screen in an exemplary embodiment of the invention;
- [0076] FIG. 63 is a graphic representation of an exemplary Shipping History Screen in an exemplary embodiment of the invention;
- [0077] FIG. 64 is a graphic representation of a Shipper online user input screen that is displayed on the Shipper's display screen in an exemplary embodiment of the invention;
- [0078] FIG. 65 is a logic flow diagram that depicts the high level logic for tracking the status of a particular package in an exemplary embodiment of the invention; FIG. 66 depicts an exemplary XML formatted request for submitting a tracking request to a Carrier in an exemplary embodiment of the invention; and FIG. 67 depicts an exemplary successful tracking response, also in XML format, returned by the Carrier in an exemplary embodiment of the invention.

Detailed Description

[0079] A portion of the disclosure of this patent document, including but not limited to the renderings of graphic user interface displays in the FIGURES, contains material which is subject to copyright protection by Stamps.com, Inc. Stamps.com, Inc. has no objection to the facsimile reproduction by anyone of the patent document or the patent disclosure, as it appears in the Patent and Trademark Office patent file or records, but otherwise reserves all copyright rights whatsoever.

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[0081] The computer System of the present invention provides a plurality of Enterprises with a single online user interface with which the Enterprise can provide Enterprise Shippers, shipping origination users and shipping intermediary users ("Enterprise Users", or simply "Users") with an automated parcel management system for a plurality of supported Carriers for a plurality of services.

[0082] FIG. 1 is a graphic representation depicting the interface relationships provided by the System 1 of the present invention between a plurality of Enterprises 2a-2n, and Carriers 4a-4n. It should be noted that the use of suffixes such as "a" through "n" in connection with numbered elements of the FIGURES herein are exemplary and are not a limitation of the invention. Rather, the suffixes "a" through "n" are used to represent a plurality, but unknown number, of similar elements.

[0083] Carriers 4a-4n supported by the System include Carriers such as Airborne, FedEx, United Parcel Service, USPS, and Yellow Freight. The System 1 is completely expandable and scalable to include additional Carriers 4a-4n and additional Enterprises 2a-2n.

[0084] As depicted in FIG. 2, each Enterprise User 7 (which may be a Shipping Manager, an Enterprise Shipper, a shipping origination user, or a shipping intermediary user) has access to a computer 8, for instance a personal computer ("PC"). The computer 8 is configured with a display device 9 that provides a display screen 10. The

computer 8 is further configured with one or more user input devices, such as, for example, a keyboard 11 and a mouse 12. The computer 8 is also configured with a printing device 13, such as a laser printer. If the computer device 8 serves as a Shipping Station, the computer 8 may be further configured with a weighing device such as a scale 1024 and a bar code reader 1027.

[0085] Enterprise Users access and browse the Internet 15 using a web browser 14 that generally resides and is executed on the user's PC 8 (with Windows 95, 98, NT 4.0, or 2000 Professional). The web browser 14 (such as Internet Explorer™ 4.0+, or Netscape Navigator™ 4.0+) allows the Enterprise User 7 to retrieve and render hyper-media content from one or more System Server computers, e.g., 20a-21z.

[0086] FIG. 3 is a graphic representation depicting an exemplary view of the System Data Center and its interfaces with Enterprise computers 8a-8n, and Carrier Server computers 23-2 through 27-2, via the Internet 15.

[0087] As depicted in FIG. 3, the System provides a plurality of server computers 20a-21z ("servers" or "server computers"). Some of the server computers are configured as Web servers, e.g., 21m-21r. The Web servers 21m-21r are configured to perform multi-parcel, multi-carrier, multi-service parcel shipping management functions. The Web servers 21m-21r are sometimes referred to herein as "shipping servers" or "shipping Web servers".

[0088] Other servers are configured as Database Servers. In an exemplary embodiment of the invention, the Database Servers are SQL Servers. Some of the Database Servers are configured to access Rating Database Data. The Database Servers that are configured to access Rating Database Data are referred to as the Rating Servers.

[0089] The Web server computers communicate through the Internet with client computers. The client computers are used by shippers to interact with a user interface provided by the system.

- [0090] In the exemplary embodiment of the invention, the system further provides at least one server computer that acts as a scheduler or "Load Balancer". The Load Balancer selects one of the plurality of shipping Web servers 21m-21r based on the load of work performed by that selected shipping Web server as compared to the other shipping Web servers. The Load Balancer directs incoming data to the selected shipping Web server for processing.
- [0091] An overview of an exemplary System architecture is depicted in FIG. 4. The overview depicted is exemplary and meant to be illustrative; it is not a limitation of the invention. As depicted in FIG. 4, one embodiment of the invention uses a three-tiered architecture.
- [0092] The Data Management Tier 1201 is comprised of a Database Storage component 1202 that in the embodiment depicted uses an SQL Server; a Message Queue Storage component 1203 that in the embodiment depicted uses MS Message Queue; and a File Storage component 1204 that in the embodiment depicted uses NTFS, and DFS. Each of the Database Storage component 1202, the Message Queue Storage component 1203, and the File Storage component 1204, communicate with the Component Tier 1208 of the System architecture, communications by each component with the Component Tier 1208 represented by elements 1205, 1206 and 1207 respectively. According to the embodiment depicted in FIG. 4, the Server Components of the Component Tier 1208 use C++ programming language and COM Objects.
- [0093] The Application Tier 1212 of the System Architecture is comprised of a Web Shipper Client component 1213 (which uses HTML (HyperText Markup Language), ASP and JavaScript), the NOC Administration component 1214 (which uses HTML, ASP, VB, and C++), and the Web Shipping Station component 1215 (which uses HTML, ASP, JavaScript, C++, and ActiveX Controls). Each of the Web Shipper Client component 1213, the NOC Administration component 1214, and the Web Shipping Station component 1215 communicate with the Server Components of the Component Tier 1208 as represented by the communication elements 1209, 1210 and 1211 respectively.

[0094] In one embodiment, the System is implemented in an NT environment. The description of the System as being implemented in an NT environment is exemplary and is not a limitation of the invention.

[0095] Continuing with FIG. 3, when an Enterprise User uses the System 1 to ship a package, one or more of the System's Servers, e.g., 21a-21n create a new System tracking number. When a new System tracking number is created, one of the System's Database Servers, e.g., 20a-20n, adds a new package record with the newly created System tracking number to a Package Table 28 that resides in the System database 22 and contains package records for System processed packages. An exemplary embodiment of the Package Table contains the following information: 1) Package Tracking State ID; 2) Package Shipping State ID; 3) Actual Delivery Time; 4) Delivered To information; 5) Shipping Date; 6) Carrier Tracking Number; 7) System Tracking Number; 8) Carrier ID; 9) Actual Package Weight; 10) Service Description; and 11) Package OID. The content of these fields are described further below.

[0096] In the exemplary embodiment of the invention, tracking is performed whenever possible using carrier-specific Tracking API's (Application Program Interface). For a Tracking API, a Carrier predefines a layout for tracking requests and predefines a layout for tracking request responses. The System 1 then provides tracking request data according to the layout predefined by the particular carrier. When the System 1 receives tracking request response data from the particular Carrier, the System 1 parses the response data according to the tracking request response layout predefined by the particular Carrier. In order to communicate with each Carrier's system, the System 1 uses the particular Carrier's Internet URL for the particular Carrier's web server system with which to make an HTTP connection to the Carrier's web server, e.g., 23-2. Depending upon the Carrier, the System's 1 tracking request and response interface with the Carrier's web server may be formatted and programmed using HyperText Markup Language ("HTML"), Extensible Markup Language ("XML"), both HTML and XML, or any requirement specified by a Carrier.

[0097] In the exemplary embodiment of the invention, in cases in which a particular Carrier does not support an API, the System performs tracking using an alternative approach sometimes referred to as web scraping. In order to track using the web scraping approach, the System 1 communicates with a Carrier by formatting HTML queries to the Carrier's Internet Website. The System 1 is programmed to receive and parse HTML responses from that Carrier's Website. The web scraping process simulates the presence and interactivity of a user at the particular Carrier's Website.

[0098] It will be understood by someone with ordinary skill in the art that the invention can be installed on an Intranet for an individual enterprise without departing from the spirit of the invention.

[0099] A. *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*

[0100] *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*

[0101] B. *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*

[0102] FIG. 7 is a graphic representation depicting an exemplary Log On System Screen in an exemplary embodiment of the invention.

[0103] *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*

[0104] In one embodiment, the System web site is optimized for Netscape Navigator 4.04 or higher, and Internet Explorer 4.0 or higher.

[0105] *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*

[0106] 2. User PreferencesThe System provides each individual Desktop User with the capability to set preferences for how they prefer to do their shipping.

[0107] *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*

[0108] Generally, Users may set preferences for various parameters, including, for example:

[0109] -Return address, phone number, e-mail address

[0110] -Password -Shipper's Reference 1 (such as a particular chargeback code)

- [0111] -Preferred carrier
- [0112] -E-mail notification (on or off) The System provides a separate area of the user interface for setting and altering user preferences.
- [0113] User preferences are only accessible by the User that owns them (the "owner User") *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]* FIG. 16 is a graphic representation of an exemplary Preferences Summary Screen in an exemplary embodiment of the invention. From the Preferences Summary Screen, the User can select an Account Info Link 110, a Change Password Link 111, a Carrier Info Link 112, a Drop Off/Pickup Link 113, and an Applications Link 114.
- [0114] If the User selects the Account Info link 110, the System displays an Account Information Preferences Screen in which the User can accept as defaults the Account Information Preference settings established by the Administrator and/or can, to the extent authorized by the Administrator, edit the Account Information Preference settings. FIG. 17 is a graphic representation of an exemplary Account Information Preferences Screen in an exemplary embodiment of the invention.
- [0115] From the Account Information Preferences Screen as depicted in FIG. 17, the User can select a Change Password Link 111, a Carrier Info Link 112, a Drop Off/Pickup Link 113, an Applications Link 114, a Package Options Link 122, a Shipment Options Link 123 or a Payment Link 126. If the User selects the Carrier Info Link 112, the System displays a Carrier Info Preferences Screen. FIG. 18 is a graphic representation of an exemplary Carrier Preferences Screen in an exemplary embodiment of the invention.
- [0116] *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]* The Carrier Info Preferences Screen depicts each Carrier, e.g., 128 (UPS), *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]* A pull down menu button, e.g. 129 for UPS 128, if clicked, displays the Services for that Carrier *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]* the User can check Carriers, e.g., 130, and Services, e.g., 131a, that the User wants to use. The User can indicate Carrier preferences by clicking a preference button, e.g., 132 for FedEx. The Carrier Info Preferences Screen also provides the capability, *[REDACTED FOR PUBLICATION*

UNDER 37 C.F.R. SECTION 1.217] for the User to request that the Rate Grid (also referred to herein as the Graphic Array) highlight an optimal choice, such as the Fastest Delivery 135, or the Cheapest Delivery 136.

[0117] If the User selects the Drop Off/Pickup Link 113 from, e.g., the Carrier Info Preferences Screen, the System displays a Drop Off/Pickup Preferences Screen. FIG. 19 is a graphic representation of an exemplary Drop Off/Pickup Preferences Screen in an exemplary embodiment of the invention.

[0118] As depicted in FIG. 19, the Drop Off/Pickup Preferences Screen displays the default Drop Off and Pickup locations *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]* the User can edit the Drop Off and Pickup locations. Each Carrier, e.g., 150 USPS, *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]* is displayed on the Drop Off/Pickup Preferences Screen. For each Carrier, the set location, e.g., 151 for USPS, is displayed. The User can display a list of alternative locations by clicking a pull down menu button, e.g., 152 for USPS. *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*

[0119] If the User clicks the Package Options Link 122, the System displays a Package Options Preference Screen. FIG. 20 is a graphic representation of an exemplary Package Options Preferences Screen in an exemplary embodiment of the invention. The default Package Options *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]* are displayed. *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]* the User can edit the settings for insurance protection 170, reference number assignment 171, verbal confirmation 172, e-mail notification 173, delivery confirmation 174, proof of delivery 175, adult signature required 176, call tag 177, merchandise description 178, certified mail 179, and return receipt 180. Help information is available for each option, e.g., 181 for Proof of Delivery.

[0120] If the User selects the Shipment Options Link 123, the System displays a Shipment Options Preference Screen. FIG. 21 is a graphic representation of an exemplary Shipment Options Preferences Screen in an exemplary embodiment of the invention. The default Shipment Options *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]* are displayed. *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]* the User can edit the settings for Destination Address Type

(Business 190, or Residence 191); shipment reference number 192; percent of shipping charges for labor or material fees 193, or a fixed amount 194; deliver deadline 195 and the delivery deadline date 196; guaranteed delivery 197; deliver without signature 198; set earliest delivery time 199 and the associated delivery time 200; documents only 201; non-dutiable 202; Freight Pickup number of flights of stairs 203, loading dock 204, and appointment required 205; Freight Delivery number of flights of stairs 206, loading dock 207, and appointment required 208. Help text is available, e.g., 209 for delivery deadline 195, for each option.

[0121] As with other preference options, an Applications Options Screen, and Payment Information Screen, display the settings and information *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]* the User can edit the settings and information provided by those screens. FIG. 22 is a graphic representation of an exemplary Applications Preferences Screen in an exemplary embodiment of the invention. The Applications Preferences Screen provides applications customization features such as: show application start pages 220 -- for the Ship It application 221; for the Price It application 222; for the Sell It application 223; and for the Preferences application 224; show advanced package options 225; show log off message 226, and Track It Options 227.

[0122] FIG. 23 is a graphic representation of an exemplary Payment Information Preferences Screen in an exemplary embodiment of the invention. *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]* the User can edit payment type 230; credit card number 231; expiration date month 232; expiration date year 233; first name 234; last name 235; e-mail address 236; company name 237; street 238; city 239; state 240; zip code 241; and telephone number 242.

[0123] 3. Security

[0124] *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]* Users are required to identify themselves to the System before gaining access. In one embodiment, identification consists of requiring the User to identify a username and password. In an alternative embodiment of the invention, the System additionally implements "sticky" identification, where user information is stored in a browser cookie. *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*

- [0125] Positive user identification for a particular Desktop User will cause the System to apply shipping rules set for that particular User *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]* to be applied to the particular User's session with the Enterprise Desktop Client.
- [0126] *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*
- [0127] Shipping transaction information and user credentials sent between end users and the System are encrypted.
- [0128] To accomplish a secure login according to the security features of the System, Users are directed to a logon page to provide authentication when trying to initially access a protected area without identification. *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*
- [0129] The System provides password recovery link options which are configurable by the Administrator. In the event that a User forgets the User's password, the System provides, *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*, password recovery links available from the logon page : one option provides the user a password reminder question, the other option generates an e-mail which sends the password to the User's e-mail address on file. *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]* FIGS. 8 through 11 are graphic representations of exemplary Password Recovery Screens in an exemplary embodiment of the invention. FIG. 12 is a graphic representation of an exemplary home page for an exemplary embodiment of the invention once an Enterprise User has successfully Logged On.
- [0130] *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*
- [0131] In one embodiment of the Enterprise Desktop Client, the System requires password aging. That is, passwords can be valid for a certain time duration. *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*
- [0132] 4.On-line Help.

- [0133] The Enterprise Desktop Client provides both high-level and (to the extent granularity is available for each particular circumstance), context sensitive help for Enterprise Desktop Client Users. *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*
- [0134] The System provides the Enterprise Desktop Client with an interface area devoted to on-line help for the application as a whole. For major areas of the Enterprise Desktop Client (shipping, tracking, preferences), a link to high-level summary help information for that area is provided. For individual sections on each page, context-sensitive help is provided for most sections.
- [0135] In one embodiment, linking to carrier specific or carrier-hosted information is supported by the System.
- [0136] Help information setup is accessible by any user that has access to the associated screens.
- [0137] 5. *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*
- [0138] *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*
- [0139] 6. Shipping Destination
- [0140] The Enterprise Desktop Client provides destination address services that enable Users to quickly and correctly specify the address for a shipment recipient, such as, for example:
- [0141] -Address validation and correction street-level validation and correction is desired, but not required. City/ST/ZIP validation and correction is required.
- [0142] -Types of Address Books and Address features include:-Personal address book.
- [0143] - *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*
- [0144] -Distribution lists
- [0145] -Add/edit/delete/clone entry
- [0146] -Import/export addresses to/from text files

- [0147] -Prompt to save new addresses to address book
- [0148] -Prompt to save changes to existing addresses (or save new) Generally, address entries should contain
 - [0149] -Contact name
 - [0150] -Company name
 - [0151] -Address Line 1
 - [0152] -Address Line 2
 - [0153] -City, State/Province, Country
 - [0154] -Phone number
 - [0155] -E-mail address
 - [0156] -Carrier account number(s)
- [0157] The System provides links to shipping history for a specified addressee for viewing shipments sent to the specified person or entity)
- [0158] FIG. 13 is a graphic representation of an exemplary Address Book List View Screen in an exemplary embodiment of the invention. As depicted in FIG. 13, the Address Book List View Screen provides a summary list of addresses in the User's Address Book. In one embodiment of the invention, a View History button is provided for each Address Book entry in both the Address Book List View and the Address Book Edit View Screens. If the User clicks the View History button, the System will display all packages shipped to and/or from (depending on the User's preference settings) the recipient with whom the View History button clicked is associated.
- [0159] FIG. 14 is a graphic representation of an exemplary Address Book Edit View Screen in an exemplary embodiment of the invention. As depicted in FIG. 14, the System provides a User in an Address Book Edit View Screen with a detailed view of address information for a particular entry in the Address Book List View Screen if the User checks a detailed box, e.g., 100 in FIG. 13.

[0160] FIG. 15 is a graphic representation of an exemplary Locations List View Screen in an exemplary embodiment of the invention. As depicted in FIG. 15, the System provides the User with Locations for Groups defined in the Address Book.

[0161] For address corrections, the User interface warns the User that the address has been "fixed" or does not exist, and asks how to proceed. The User can proceed with an invalid address, subject to certain constraints (i.e. invalid street address OK, invalid ZIP code, not OK.) The user interface warns the User that delivery to POBs is limited to the USPS, if a POB is specified as the address.

[0162] The System provides the user with a shortcut capability to select addresses from the address book, using such features as "nicknames."

[0163] Users can add/modify/delete entries in their Personal address book, but not in shared address books. Only Administrators can modify shared address books.

[0164] The Desktop Client provides each User with the ability to import and bulk load addresses into the User's personal address book.

[0165] 7. Shipping Return Address and Origin.

[0166] *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]* Desktop Users can set their return address in user preferences and can override the preset return address when desired. *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]* The Enterprise site (origin) will drive user interface aspects and options available to a User such as drop-off locations displayed, allowable carriers, the account number used, the cut-off times, etc.

[0167] The Enterprise Desktop Client user interface uses the User's return address information maintained in user preferences in a number of ways, including, for example:

[0168] -The return address is auto-filled by the System with the address specified in the User's preferences. The return address may be overridden by the User.

[0169] *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*. End of day reports account for packages dropped-off at an off-site location.

[0170] 8. Shipment Rating.

[0171] The System prompts Users to supply information necessary to price shipment of a package. FIG. 24 is a graphic representation of an exemplary Price It Start Page in an exemplary embodiment of the invention. As depicted in FIG. 24, a User's default preference settings are displayed. To change information, the User clicks on the Change button, e.g., 250, associated with the section of information, e.g., Shipment Information 251, that the User wants to change.

[0172] Clicking one of the Change buttons, e.g., 250, causes the System to display a detailed Price It Shipping Estimate Screen with which the System prompts the User to supply the changed information. FIG. 25 is a graphic representation of an exemplary Price It Shipping Estimate Screen in an exemplary embodiment of the invention. *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]* the User edits the Shipping Estimate data fields: Origin zip code 149; drop off location (by clicking the drop off location link 281); destination address fields (nickname 261; country 262; city 263; state 264, and zip code 266) can be populated by clicking the Address Book link 260, locating the appropriate Address Book entry, and clicking on that entry; business 190 or residence 191; number of packages 270; all packages in shipment same 271 or not 272; package weight in pounds 273 and ounces 274; packing type 275; or the package dimensions in length 276, width 277 and height 278; whether the packaging is irregular or non-standard 279; and advance package options 280. Clicking the Drop-off Location link 281 causes the System to display a Drop Off Locator Screen as depicted in FIG. 26.

[0173] FIG. 26 is a graphic representation of an exemplary Drop Off Locator Screen in an exemplary embodiment of the invention. The Drop Off Locator Screen provides a Location Type window 282 and a pull down menu button 283 with which the User can specify the Location type. The User is prompted to specify the Carrier 284, using a pull down menu button 285. The User can specify if the report should only show locations where the day's deadline has not yet passed 286. When the User has input the necessary locator information, the User clicks the Go button 287. The System locates all locations matching the User specified criteria and reports them 289. The User can sort the report by deadline time 288 by clicking the deadline time

heading 288 on the onscreen report.

- [0174] In one embodiment, the User enters only a recipient's e-mail address in a shipping request. The System uses the recipient's e-mail address, e.g., 293-1 as depicted in FIG. 27, as a database key to retrieve information about the recipient's shipping address and use that information to populate the shipping request delivery address information. FIG. 27 is a graphic representation of an exemplary Shipping Addresses Screen in an exemplary embodiment of the invention. Inputting the Recipient's e-mail address 293-1 causes the System to populate the Destination address information 293 if the information is already in the Address Book.
- [0175] If the Destination address information for the specified Recipient is not already in the Address Book, the User must input the Destination Address information 293 and can indicate to the System to save the new address in the Address book 293-2.
- [0176] The user can specify notification e-mail addresses 294 to which the System generates and sends an e-mail notifying that a package has been sent. The User can enter a message for the e-mail 295, a description of the package 296 and a reference number 298. If no message is specified, the System sends a standard message. The User can click the Browse button 297 to browse a library of item descriptions contained in the System databases.
- [0177] FIG. 28 is a graphic representation of an exemplary Shipping Payment Screen in an exemplary embodiment of the invention that is displayed when a package is to be shipped. The System populates the data fields displayed in the Screen with default information according to *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]* User preferences, and to the extent as discussed below, Recipient preferences. The User can supply other payment information by completing the appropriate fields. The default payment type 299-1 is set by the System according to any defaults as mentioned above. The System provides a drop-down menu button 299-2 with which the User can select a different payment type. If the User changes the Payment type, the appropriate fields are displayed for User data input 299-3.

- [0178] In one embodiment, the System provides recipients with the capability to set up recipient shipping preferences which are related to the Recipient's e-mail address in the System databases. Recipient Preference Screens are similar to those described herein with regard to the User's Preference Screens, and are saved by the System in the System databases so that the Recipient's Preferences are accessible by the Recipient's e-mail address. In such an embodiment, when the User enters the Recipient's e-mail address, the System populates not only the shipping delivery address, but the Recipient's shipping preferences as well.
- [0179] In one such embodiment, the Address Book entry for the Recipient contains the Recipient's e-mail address. The System provides in such an embodiment, a Quick Ship option, such as from the Address Book entry for the recipient. The User clicks the Quick Ship button associated with a particular Recipient's entry in the Address Book and the System populates the shipping delivery address and the Recipient's shipping preferences.
- [0180] i.)Shipment Rating for Returns Processing.
- [0181] In one exemplary embodiment of the invention, the System of the present invention is integrated with a Returns System such as disclosed in U.S. Patent Application attorney docket number PSTM0042/MRK the disclosure of which is incorporated for all purposes herein by reference as if fully stated here. In such an integrated Returns System/Enterprise System embodiment, a Recipient can arrange for the return to an Enterprise of an item previously shipped by the Enterprise to the Recipient. To do so, as will be described in more detail below, the Recipient of the previously shipped package accesses the Enterprise's Online Internet Web site, views the Enterprise's Recipient Order History for that Recipient, and clicks on a Return button associated with the particular package to be returned.
- [0182] In such an integrated Returns System/Enterprise System embodiment, as described in more detail below, the Enterprise User *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]* sets up Returns Policy rules. The System populates all of the appropriate fields regarding the package to be returned with the information stored in the System databases by the original Enterprise User. The Integrated Returns/Enterprise System allows the Recipient, as further described

below, to set up Recipient Shipping Preferences. When a Recipient requests return processing, the Returns/Enterprise System asks the Recipient a series of Returns Questions, and processes the return request in accordance with the Recipient's responses to the Returns Questions and in accordance with the Returns System processing settings as established by the Enterprise's User *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*. If the Recipient is paying for the return shipping, the Returns/Enterprise System allows the Recipient to choose the return shipping Carrier and Service from a Graphic Array comparison display of shipping charges for those Carriers authorized for Returns Processing by the Enterprise. Return processing populates the Inbound Tracking Log for the Enterprise User and notifies the User of the return..

[0183] FIG. 29 is a graphic representation of an exemplary Order History display for a particular Customer in a particular Enterprise's Online Internet-based website. In the exemplary case depicted in FIG. 29, the exemplary Order History display depicts an order history for an exemplary Customer of the Enterprise in the particular Enterprise's Online Internet store.

[0184] In the exemplary Enterprise's Online Store, as depicted in FIG. 29, the Enterprise displays the Enterprise's Logo 4380. The exemplary Enterprise's Online Store provides a main menu of options 4382, for example, "Welcome", "Online Merchandise", "Catalog Merchandise", "Place Orders", "Return Merchandise", etc. Further, in the exemplary Enterprise's Online Store, each Page provides a Submenu of options 4381 that provide functionality appropriate for the selected main menu option. In the illustrative FIGURES described below, the Consumer has entered the Enterprise's Online Store, and has entered, for example, the Return Merchandise page. With the Return Merchandise page, the Enterprise's Online Store provides appropriate Submenu selections 4381 that allow the Consumer to view the Consumer's Order History and access the Consumer Returns Subsystem to return merchandise.

- [0185] In the exemplary Order History display depicted in FIG. 29, the particular Consumer's Shipped Orders 4400 are listed, e.g., 4401-1 through 4401-7. From the Order History as depicted in FIG. 29, the Consumer can select a particular order number, e.g., 4401-1, by, for example, clicking the cursor on the order number 4401-1.
- [0186] To return an order, or an item from within a particular order, the Consumer selects a particular order number, e.g., 4401-1. Selecting a particular order number, e.g., 4401-1, causes the Enterprise's Online store system to display (4361 in FIG. 30a) an Order Summary as depicted in FIG. 31.
- [0187] FIGS. 30a through 30c are logic flow diagrams depicting an exemplary high level logic flow for a Consumer's experience with an exemplary embodiment of the Returns System of the present invention from within a Merchant's Online store. FIG. 31 is a graphic representation of an exemplary Order Summary Screen for a particular Order Number for a particular Consumer from within a particular Enterprise's Online store in an exemplary embodiment of the invention.
- [0188] The exemplary embodiment of the invention depicted in FIGS. 30a-30c shows that the Enterprise's Online store system accesses the Return System's Tracking Database 4115 (which is part of the Return System's databases 22 as depicted, e.g., in FIG. 3) to provide the Consumer's Order History and Order Summary information. In an alternative embodiment, the information necessary to populate the Consumer's Order History and Order Summary information is contained within the Enterprise's store's own databases.
- [0189] As depicted in FIG. 31, a Return System icon, e.g., 4402, is displayed on the Order Summary Screen. To return a particular item or set of times, the Consumer must click on the Return System icon 4402. If the Consumer clicks on the Return System icon 4402, the System generates the display of a Returns Service Screen. FIG. 32 is a graphic representation depicting an exemplary Returns Service Screen provided by the Consumer Returns Subsystem in an exemplary Enterprise's Online store in an exemplary embodiment of the invention.

[0190] In a Returns Service Screen, such as the exemplary one depicted in FIG. 32, the Enterprise's Standard Policy Overview Statement 4420 (e.g., 4160 as depicted in FIG. 33) is displayed. To display the Enterprise's Standard Policy Overview Statement 4420, the System retrieves the Enterprise's Policy Overview statement 4362 from the Return System Account Database 4106 as depicted in FIGS. 30a-30c. Continuing with FIG. 32, a check box, e.g., 4421-1 through 4421-7, is displayed next to each ordered item, e.g., 4404-1 through 4404-7. To return a particular item or set of times, the Consumer must select the items to be returned 4363 as depicted in FIGS. 30a-30c. Continuing with FIG. 32, a Consumer that wants to return a particular item, e.g., 4404-7, checks the check box 4421-7 associated with that item (multiple boxes for multiple items can be checked) and then clicks the onscreen "Next Step >>" button 4422.

[0191] FIG. 34 is a high level data and logic flow diagram depicting an overview flow of the Returns System flow in an exemplary embodiment of the invention. As depicted in FIG. 34, the Enterprise establishes the Enterprise's returns policy in the Returns Policy Database 800 using the Returns Manager Subsystem 752. The Consumer Returns Subsystem displays the Enterprise's standard returns policy 791 and walks the Consumer through the appropriate return questions, applying the appropriate return rules, including exceptions 794 as that process is depicted in FIG. 35.

[0192] Continuing with FIG. 34, the Consumer then uses the System's shipping functionality 802 provided by the Returns Processing Subsystem 815 in the exemplary embodiment of the invention to return ship the merchandise 801. Returns shipping processing assigns the returned package a return tracking number 803. The Return Processing Subsystem provides a Background Tracking Agent 804 that periodically accesses the list of return tracking numbers and in an asynchronous manner uses the System's multi-carrier tracking function 805 to access the System's tracking servers, e.g., 21s-21z (as depicted in FIG. 3) and populates the return tracking databases 771, 773 (details). The System provides Consumer tracking of a return shipment 806 through a Consumer Returns Subsystem access to the Returns Processing SubSystem's Multi-Carrier tracking function 805. The Multi-Carrier Tracking function 805 is described further below.

[0193] Returning to FIG. 32, once the Consumer clicks the onscreen "Next Step >>" button 422, then as depicted in FIGS. 30a-30c, the Return System then prompts the Consumer, through the Consumer Returns Subsystem in the Enterprise's Online Store system, to answer the Enterprise's Return Questions and provide the requested Return Reasons 4364.

[0194] FIG. 36 is a high level interactivity diagram depicting an exemplary embodiment of the interactivity of the Customer Returns Subsystem between a Consumer's Client Machine, Customer Returns Page, various Customer Returns Subsystem functions, and the Return System servers in an exemplary embodiment of the invention. As depicted in FIG. 36, a portion of the Consumer Returns Subsystem 901 operates on the Consumer's (also referred to here as the Customer) Client Machine 900. When the Consumer accesses the Enterprise's online store, the Enterprise's menu options allow the Consumer to access the Consumer Returns Page 902 from within the Enterprise's online store. From the Consumer Returns Page, the Consumer can access the Consumer Returns functions such as, for example: Display of the Enterprise's Standard Policy and display items available for return 903 from the Standard Policy data 754; prompt the Consumer for the reason for the return 904; prompt the Consumer for shipping information such as the carrier with which the package will be returned and the packaging of the item 905; finalize shipping of package 906; and print a shipping label 907 saving the shipping label information, such as the tracking number, in a Return Label database 908. As with the Returns Manager Subsystem, the Consumer Returns Subsystem uses the Return System's web servers 21m-21r to interact with the Consumer, and uses the Return System's Database servers 20a-20n to access the various databases in the Policy Database 800 that are needed to supply the information for the interactivity

[0195] FIG. 37 is a graphic representation of an exemplary Returns Service Return Reason Screen in an exemplary embodiment of the invention. As depicted in FIG. 37, for the Order selected 4401-1, for the item 4404-7 selected to be returned 4421-7, the Enterprise's Question 4206 is asked, prompting the Consumer with acceptable answers 4216, 4207, 4212, and 4220 for selection 4427-1 through 4427-4 respectively. A Consumer Comments window 4425 is provided with up and down scroll buttons 4426-1 and 4426-2 in which the Consumer can specify a

narrative description.

[0196] As depicted in FIGS. 30a-30c, the Return System compares the Consumer's Return Reason with the Enterprise's Return Policy 4365. According to the Enterprise's Return Policy, if the Consumer's Return Reason is "justified", then the Return System authorizes the return 4369 (and according to the Enterprise's Return Policy, pays for the Return Shipping), calculating a Refund Amount and allowing the Consumer to Launch a Label 4370, Print a Shipping Label 4371; the Return System thanks the Consumer 4372 and Prepares a Package Return Shipped e-mail 4373.

[0197] Returning to FIG. 37, a Refund Amount 4172 is calculated based upon the standard policy choices made by the Enterprise ($\text{Refund Amount } 4172 = \text{Item Price } 4173 + \text{Item Tax } 4174$, as depicted in FIG. 33). When the Consumer has completed the Return Reasons for the particular item, the Consumer clicks the onscreen "Next Step >>" button 4422.

[0198] FIG. 38 is a graphic representation of an exemplary Return Summary Screen in an exemplary embodiment of the invention. The Return Summary Screen depicted in FIG. 38 displays the Enterprise's Response 4213-1 appropriate for the Consumer's Return Reason 4427-3 depicted in FIG. 37 in response to the Enterprise's Return Question 4206 and possible Return Answers 4216, 4207, 4212 and 4220 depicted in FIG. 37. The Return Summary Screen depicted in FIG. 38 displays the item description of the item being returned 4404-7, the Reason for Return 4212, and the Consumer's comments 4425. The Return Summary Screen also displays the item price 4173 and the calculated Refund Amount 4172.

[0199] The Return Summary Screen prompts the Consumer to select one of the Enterprise's choices of Carriers 4187-1, 4188-1, 4190 and 4184. The Return Summary Screen also prompts the Consumer to indicate whether 4433 or not the 4434 the returned item is in its original packaging 4432. By pressing the onscreen "Next Step >>" button 4422, the Return System displays a Label Create Screen. Label Printing is described further below.

[0200] a.) Weighing the Package.

[0201] *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]* the User, the Desktop User, or in the alternative, a Shipping Station, will need to supply the weight (e.g., 273-274, FIG. 25) of the parcel to be shipped. This can be done by weighing the package and entering the weight in a System data collection screen, or, in one embodiment of the invention, the Shipper's PC is configured with a scale and the System communicates with the Shipper's scale using the User's client web browser. FIGS. 39a through 39c depict an exemplary logic flow for communications between the System and a Shipper's PC and a scale configured with the Shipper's PC. In the exemplary embodiment, the Shipper establishes in the System certain information about the Shipper's PC configuration at the time the Shipper sets up an Account 601. If the Shipper's PC is configured with a scale, the Shipper specifies scale configuration information 602 such as: the make and model of scale, and the type of port (e.g., serial or parallel) with which the scale is configured with the PC. Further, the System provides storage and access 603 for the Shipper's scale configuration information in a database 604.

[0202] In the exemplary embodiment of the invention, the System supports various makes and models of scales. Each scale make and model has a set of features and requirements for which the System must be programmed in order for the System to communicate properly with each particular scale. The System provides an ActiveX control dedicated to communications with peripheral devices configured with client PCs ("Shipping Station ActiveX Control") 607. Contained within the Shipping Station ActiveX Control is a table (the "scale table") 608 containing entries for each supported scale make and model and provides logic to process the communication information for each scale make and model as appropriate. It should be understood by someone skilled in the art that the Shipping Station ActiveX Control facilitates communications with various devices on the client machine. The Shipping Station ActiveX Control 607 and the scale table 608 are requested 606 by the web page (the "System/scale interface") containing the Weight field 1051 at the time that the Shipper activates 605 the Weight field (e.g., 273-274, FIG. 25). Once the web page requests the Shipping Station ActiveX Control 607, the Shipping Station ActiveX Control 607 is automatically installed on the client 609. In the event that the Shipping Station ActiveX Control is updated to facilitate the support of additional

scale makes and models, the Shipping Station ActiveX Control is automatically reinstalled on the particular client PC the next time that the Shipper activates the Shipping Station ActiveX Control.

- [0203] The Shipper places the Subject Parcel on the scale 610. The Shipper activates the Shipping Station ActiveX Control by placing the cursor of the Shipper's PC on the Weight field (e.g., 273-274, FIG. 25). The System checks the Shipper's scale configuration information to determine 611 whether the Shipper's PC is configured with a scale. If so, the System activates the System/scale interface 613. Otherwise, the user may input the weight 612 in the weight fields 273-274 as depicted in e.g., FIG. 25.
- [0204] In one embodiment of the System/scale interface aspect of the invention, the System uses ActiveX control language and the client's web browser, such as Internet Explorer browser. Using the Shipper's scale configuration information, the System calls Windows libraries 615 to open the serial or parallel port with which the scale is configured, as the case may be and as is specified in the Shipper's scale configuration information. Windows is an operating system used with most PCs.
- [0205] The System uses the information for the particular scale make and model from the scale table 608 of scale makes and models to send a communication query to the particular scale 616. Typically, the communication query information required by a particular scale make and model is a particular set of characters. Each scale make and model recognizes a unique set of characters as a request for a weight. Accordingly, the appropriate set of characters that means a request for weight to a particular scale make and model is stored in the scale table for a particular scale make and model.
- [0206] After a proper query, a scale will return a data stream containing the weight of the parcel 617. Depending on the scale make and model, other types of information may be contained in the return data stream. The System accesses the scale table 608 to interpret 618 the return data stream according to the scale make and model rules as stored in the scale table and as programmed in the Shipping Station ActiveX Control.

- [0207] Other scale communication information is contained in the scale table for each scale make and model, including, for example: the character string that communicates a request as to whether or not the weight is stabilized; the default contents of the return data stream of the weight from a particular scale make and model; and the character string to request that the scale send the weight mode with the return data stream. Weight mode is the mode with which the scale measures weight (e.g., pounds, kilograms, etc.).
- [0208] In one embodiment, as long as the Shipper's cursor remains on the Weight field (e.g., 273-274, FIG. 25), the System polls the scale repeatedly requesting the weight and requesting notification that the weight is stabilized 619. Each time the System polls the scale, the System tests to determine 620 whether or not there is a difference in the weight as compared with the last time that the System polled the scale. If the System determines a difference in weight, then the System uses the Shipping Station ActiveX Control to fire an event 621 to the client web browser to display on the User Interface screen that the weight has changed.
- [0209] In one embodiment, once the Shipper removes the cursor from the Weight field (e.g., 273-274, FIG. 25), the System stops polling the scale 622. If prior to the last polling to the scale, the scale notifies the System that the weight has stabilized 623, the System will proceed with preparing the Graphic Array if requested to do so by the Shipper 625. Otherwise, if the System determines a difference in weight, the System notifies the Shipper that the weight is not stable 624.
- [0210] b.)The Graphic Rate Comparison Array.
- [0211] Continuing with FIG. 25, once the User has entered shipping estimate information, the User can preview rates by clicking the Rates and Times link 290. Clicking the Rates and Times link 290 causes the System to display a Graphic Array, also referred to as a Rate Grid, that provides Users with a comparison view of the costs and delivery schedules for the carriers and services available at their Enterprise in an easy to use, Graphic Array summary format. The costs displayed are based on the custom rates entered for their Enterprise. The format enables the User to make an informed business decision on the tradeoff between cost and delivery time subject to shipment policies established by the Administrator.

- [0212] In an exemplary embodiment of the invention, the System uses MTX.exe as a transaction server. MTX.exe is an executable program that is part of the Microsoft suite of Internet web solution products.
- [0213] In the exemplary embodiment of the System, Web pages are grouped in organization units referred to as "virtual directories". For example, in the exemplary embodiment, all of the user interface Web pages that prompt a user to input registration data, and that provide interactive feedback to the registering user, would be grouped into a virtual directory. When a request for a particular Web page is received by a particular shipping Web server, the shipping Web server determines which virtual directory is needed. Depending on the virtual directory to be accessed, MTX.exe loads one of a plurality of COM objects, which are DLL's (Dynamic Link Libraries), for the System. One of the COM objects for the exemplary embodiment of the system is referred to as the Rating.DLL.
- [0214] Each Enterprise user is enabled to process one or more Carriers from a plurality of Carriers supported by the system and authorized for use by an Administrator. In the exemplary embodiment of the invention, when a user, through the User's client PC, issues a rating request, the System passes a list of carrier identifiers for the carriers enabled for that user to the Rating.DLL operating on the shipping Web server to which the rating request is directed.
- [0215] The Rating.DLL consists of various rating-related functions, one of which is referred to as "Get_Rate_Function". Get_Rate_Function receives as input the carrier IDs for the carriers enabled for the particular user, package information, shipping information, including origin and destination postal codes, and other information. Get_Rate_Function parses the received input information and tests the carrier ID to determine the name of one of a plurality of Carrier-specific shipment rating routines that is to be performed in order to rate shipments for the particular carrier ID. In the exemplary embodiment of the invention, the Carrier-specific shipment rating routines are SQL Stored Procedures that are executed by the appropriate SQL Database Server. Get_Rate_Function then causes the appropriate Carrier-specific shipment rating routine to be performed to rate the User-specified shipment according to the relevant Carrier's business rules.

[0216] *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*

[0217] c.)An Alternative Embodiment of the Graphic Array

[0218] An alternative exemplary embodiment of a Graphic Array is depicted in FIG. 42. In the embodiment of the Graphic Array depicted in FIG. 42, the particular screen is titled the Rates and Times Screen.

[0219] As depicted in FIG. 42, the exemplary Graphic Array contains the following information and display elements: 1) valid delivery dates 1063 (1063-1 through 1063-3) across the top of the graphic display for the selected Ship Date; 2) sorted, valid delivery times 1064 (1064-1 through 1064-6) for all valid dates down the left side of the graphic display; and 3) color coded by Carrier, Carrier cell entries, e.g., 1065, for each available rate, by date and time.

[0220] In the exemplary embodiment depicted in FIG. 42 the Graphic Array comprises an array of intersecting rows and columns. Each column corresponds to a day and date of parcel delivery. In FIG. 42, the days and dates of delivery shown are "TUE 28 SEP 99" (1063-1), "WED 29 SEP 99" (1063-2) and "THU 30 SEP 99" (1063-3). As depicted in FIG. 42, space for other columns (1063-4 through 1063-7) are available for display; in the case of the example depicted in FIG. 42 however, no dates are displayed in those columns.

[0221] Each row of the Graphic Array corresponds to a time of delivery. In FIG. 42, the times of delivery are shown as "8:00 AM" (1064-1), "10:30 AM" (1064-2), "12:00 PM" (1064-3), "3:00 PM" (1064-4), "4:30 PM" (1064-5), and "5:00 PM" (1064-6).

[0222] At the intersection of each row (1064-1 through 1064-6) and column (1063-1 through 1063-7) of the Graphic Array is a "cell." In FIG. 42, cells will be referred to by the element 1071, and by the intersecting row (1 through 6) and column (1 through 7) the intersection of which forms the space for each cell (1071-1-1, 1071-1-2, . . . 1071-6-7). Some of the cells depicted in FIG. 42 are empty, e.g., 1071-5-1, 1071-6-1, 1071-6-3, 1071-6-4. Empty cells represent the circumstances that none of the Carriers supported by the System (the "supported Carriers") support delivery of the Subject Parcel for the time and date for which that cell represents the intersection.

[0223] Some cells depicted in FIG. 42 have one or more cell entries. In FIG. 42, each cell entry represents a particular Carrier. Each Carrier cell entry is color coded with a unique color, the unique color corresponding to a particular Carrier as is discussed in more detail below; each Carrier cell entry contains a graphic element, e.g., 1147a, and a monetary amount, e.g., 1147b, which represents the price for which the corresponding Carrier would deliver the subject parcel. For instance, cell 1071-1-1 contains a single Carrier cell entry 1148. Cell 1071-3-1 contains two Carrier cell entries 1065 and 1149.

[0224] A color-coding legend 1062 is displayed on the Screen to identify by a name (1140b, 1141b, 1142b, and 1143b) and a color-coding symbol (1140a, 1141a, 1142a, and 1143a), each of the supported Carriers that provide the service according to the particular Shipper's Parcel Specifications for the particular Subject Parcel.

[0225] For purposes of this application, unique colors are depicted with graphic symbols. For example, a right-diagonal hash mark symbol 1140a is used herein to represent the color red; a left-diagonal hash mark symbol 1141a is used herein to represent the color purple; a vertical hash mark symbol 1142a is used to represent the color amber; and a horizontal hash mark symbol 1143a is used to represent the color blue. The particular hash mark symbols used herein and the colors mentioned herein are exemplary and are not a limitation of the invention.

[0226] Each cell of the Graphic Array that is not empty contains one or more color-coded Carrier cell entries. For example, in FIG. 42, cell 1071-3-1 contains two Carrier cell entries, 1065 and 1149. Carrier cell entry 1065 is color-coded with the right-diagonal hash mark symbol (representing the color red) which, according to the color-coding legend 1062, corresponds 1140a with the Carrier identified as "Airborne" 1140b. Carrier cell entry 1149 is color coded with the horizontal hash mark symbol (representing the color purple) which, according to the color-coding legend 1062, corresponds 1143a with the Carrier identified as "USPS" 1143b.

[0227] Each Carrier cell entry, e.g., 1065, contains a graphic element, e.g., 1065a, which contains what is known as "ALT text". As depicted in FIG. 42, a Shipper viewing the Graphic Array online can place the PC's cursor on the graphic element, e.g., 1065a of a particular Carrier cell entry, e.g., 1065, to display a pop-up screen 1069 that displays the ALT text for that particular Carrier cell entry. In some embodiments, the ALT text will be displayed by merely placing the cursor over the graphic element for a particular Carrier cell entry and leaving the cursor in that position for a certain time interval. In alternative embodiments, the Shipper must click on the graphic element for a particular Carrier cell entry in order to display the ALT text. In the exemplary embodiment depicted in FIG. 42, the displayed ALT text, e.g., the text displayed in pop-up screen 1069, contains the full Carrier name (in the depicted case, "Airborne Express") and the full Carrier service name (in the depicted case, "Express Overnight Service") for the Carrier 1140b (in this case, Airborne) to which that Carrier cell entry corresponds.

[0228] As depicted in FIG. 42, the color for the Carrier identified as "Airborne" 1140b is depicted in the color coding legend 1062 with a right-diagonal cross-hatch symbol 1140a. Accordingly, each Carrier cell entry contained within the Graphic Array with the right-diagonal cross-hatch symbol, e.g., 1065, corresponds to a delivery of the Subject Parcel supported by the Carrier "Airborne". Appearing in each of the color-coded Carrier cell entries, e.g., 1065 is a graphic element, e.g., 1065a, and a monetary value, e.g., 1065b. The monetary value, e.g., 1065b corresponds to the price that the corresponding Carrier would charge to deliver the Subject Parcel according to the time 1064-3 and date 1063-1 specified according to the row and column of which the intersection (which, in the case described is cell 1071-3-1) contains the Carrier cell entry 1065. For example, as depicted in FIG. 42, the Carrier cell entry 1065, depicted with the right-diagonal cross-hatch symbol, contains the monetary amount \$9.00. Accordingly, the amount "\$9.00" is the price that the Carrier Airborne would charge to deliver the Subject Parcel at the identified time of 12:00 p.m. 1064-3 on the identified date of Tuesday, September 28, 1999 1063-1.

- [0229] Similarly, as depicted in FIG. 42, the color for the Carrier identified as "FedEx" 1141b is depicted in the color coding legend 1062 with a left-diagonal cross-hatch symbol 1141a. Accordingly, each Carrier cell entry contained within the Graphic Array with the left-diagonal cross-hatch symbol, e.g., 1147, corresponds to a delivery of the Subject Parcel supported by the Carrier "FedEx."
- [0230] Further, as depicted in FIG. 42, the color for the Carrier identified as "UPS" is depicted in the color coding legend 1062 with a vertical cross-hatch symbol 1142. Accordingly, each Carrier cell entry contained within the Graphic Array with the vertical cross-hatch symbol, e.g., 1148, corresponds to a delivery of the Subject Parcel supported by the Carrier "UPS."
- [0231] Similarly, as depicted in FIG. 42, the color for the Carrier identified as "USPS" is depicted in the color coding legend 1062 with a horizontal cross-hatch symbol 1143. Accordingly, each Carrier cell entry contained within the Graphic Array with the horizontal cross-hatch symbol, e.g., 1149, corresponds to a delivery of the Subject Parcel supported by the Carrier "UPS."
- [0232] In the embodiment of the Graphic Array depicted in FIG. 42, the Graphic Array is dynamically dimensioned. For instance, only the dates and days (1063-1 through 1063-3) for which delivery that conforms to the particular Shipper's Parcel Specifications for the particular Subject Parcel are displayed across the top of the graphic. For example, for the date Tuesday, September 28, 1999 (1063-1), at the time 5:00 p.m. (1064-6), no Carrier supports delivery of the Subject Parcel.
- [0233] Further, as depicted in FIG. 42, only the times (1064-1 through 1064-6) during which at least one of the Carrier/Services identified as supporting the delivery are displayed along the Viewer's left side of the Dynamically Dimensioned Multi-Carrier Graphic Array online display.
- [0234] Still further, as depicted in FIG. 42, a Carrier cell entry, e.g., 1065, is displayed for each of, but only for each of, the Carriers/Services that support delivery for a particular day and time in the cell of the Graphic Array that represents delivery on a particular day and at a particular time. When the circumstances require, the System displays one or more Carrier cell entries in a single cell. For instance, cell 1071-3-1

contains two entries, 1065 and 1149; whereas cell 1071-1-1 contains only a single cell. Accordingly, as depicted in FIG. 42, the cell size expands vertically to accommodate multiple Carrier cell entries.

[0235] In the exemplary embodiment depicted in FIG. 42, the color-coding legend 1062 for each of the Carriers/Services represented in the Graphic Array is displayed with color-coding graphic elements (1140a through 1143a) and identification labels (1140b through 1143b) for each relevant Carrier/Service along the Viewer's right side of the rating and timing graphic. Alternatively, instead of the printed name, the logo for the particular Carrier/Service can be displayed. As another alternative, the Carrier/Service logo can be displayed in color in the color-coding legend 1062.

[0236] The particular arrangement of the color legend 1062 depicted in FIG. 42 and the particular colors used in the color legend depicted therein are exemplary and are not a limitation of the invention. In an alternative embodiment, instead of using color, other visually distinctive methods are used to differentiate between different Carriers/Services. For instance, other visually distinctive methods of Carrier/Service differentiation include but are not limited to: three-dimensional texture effects, other three-dimensional effects, two-dimensional markings (for instance, dots, cross-hatching, and the like), lighting effects, graphic symbols (for instance, the logos of the Carriers/Services) and any combination of the aforementioned features with color.

[0237] In the embodiment of the Graphic Array depicted in FIG. 42, the exemplary Graphic Array is depicted as horizontally wide enough to accommodate seven delivery days (1063-1 through 1063-7) within a particular delivery timespan. The depiction in FIG. 42 of the Graphic Array as a fixed size accommodating up to seven delivery days is exemplary and is not a limitation of the invention. In alternative embodiments, the Graphic Array online display collapses or expands in total size to reflect the actual number of rows and columns that need to be present in order to display the Carrier cell entries for the Carriers/Services that support delivery of the Subject Parcel according to the Shipper's Parcel Specifications.

[0238] The arrangement as depicted in FIG. 42 of the parcel delivery days and dates (1063-1 through 1063-7) across the top and the parcel delivery times (1064-1 through 1064-6) along the left side of the Graphic Array is exemplary and is not a limitation of the invention. In one alternative embodiment, the parcel delivery days and dates are displayed across the bottom, and the parcel delivery times are displayed on the Viewer's right side, of the Graphic Array. In other alternative embodiments, the parcel delivery days are arranged on one of the two sides of the Graphic Array and the parcel delivery times are arranged along the top or the bottom of the Graphic Array. In such an alternative embodiment, the cells of the Graphic Array are expandable horizontally to accommodate the appropriate number of relevant Carriers/Services.

[0239] As depicted in FIG. 42, the Shipper is asked to input the Expected Ship Date 1060. In the exemplary embodiment depicted, a drop down menu activation mechanism 1061 provides the Shipper the ability to activate a pull down menu (not shown) of seven entries beginning with the current date and includes the six days immediately following the current date. The format used is "M/D/YY - Day name". "Today" and "Tomorrow" are displayed appropriately. The number of entries provided by the selection mechanism, the format of the Expected Ship Date, and other features described herein are exemplary and are not a limitation of the invention.

[0240] In the exemplary embodiment depicted in FIG. 42, once the Shipper selects the Expected Ship Date, the System uses the Expected Ship date and the other information provided by the Shipper, such as in the screen depicted in FIGS. 25 and 41 described above, to access the Carrier Rules, apply the Carrier Rules, and prepare the Graphic Array containing the delivery prices and delivery times for the Subject Parcel according to the Shipper's Parcel Specifications. The System will then generate the signals necessary to display the Graphic Array and cause the Graphic Array to be displayed on the Shipper's PC.

[0241] Once the Graphic Array is displayed, the Shipper can change previously input information and the System will automatically regenerate the Graphic Array with the delivery rates and delivery times that have been updated to reflect the new information. For instance, if the Shipper selects a new shipping date, the System will regenerate the Graphic Array with the appropriate new rates and times. The logic for regenerating the Graphic Array is described in more detail below.

[0242] In the exemplary embodiment depicted in FIG. 42, a Ship Location Type drop down menu activator 1067 is located below the Graphic Array. The particular location of the Ship Location Type selection mechanism as described herein is exemplary and is not a limitation of the invention. If the Shipping Location class is a "ship center", a "Find Location" button 1068 is displayed next to the drop down menu. In order to open the Drop Off Locator in a pop-up window, the Shipper places the Shipper's PC cursor on the "Find Location" button 1068 and clicking the Shipper's user input device. The Origin Zip Code and Ship Location type values supplied by the Shipper are used as parameters for the Drop Off Locator to locate a list of possible Drop Off Location choices. The Shipper can select a Drop Off Location from the Drop Off Locator menu. The system dynamically responds to changes by the Shipper to Origin Zip Code and Ship Location type to present choices of Drop Off Location choices.

[0243] Navigational buttons appear at the bottom of the Rates and Times Screen depicted in FIG. 42. Clicking the "Back" button 1070 will return the Shipper to the previously displayed screen. Clicking the "Next" button 1054 will cause the next screen to be displayed but only if the Shipper has selected a particular Carrier cell entry. For example, if the Shipper clicks on a particular Carrier cell entry such as 1065, the System will allow the Shipper to then click on the "Next" button 1054 and proceed to, e.g., print a Traveler Label, as depicted in FIG. 56.

[0244] If a user returns to the Rates and Times Screen (FIG. 42) from any of the Specification Screens, e.g., FIGS. 25 and 41, any Specification changes will effect the displayed rates.

- [0245] Using the subject parcel's Parcel Specifications, the System is programmed to access databases containing information about each supported Carrier. Each supported Carrier has a unique rating schedule, delivery and pickup rules and schedules, and certification requirements (the "Carrier Rules"). The System is further programmed to apply each supported Carrier's Rules to each Shipper's Parcel Specifications for the corresponding Subject Parcel. The System calculates the Shipping Charges based on zip-to-zip pricing where the Seller has provided the origin zip code and the Buyer has provided the destination zip code.
- [0246] To develop the rates for display in the Graphic Array, the System rating component is instantiated in the server-side script such as described above. The rating component's rate information method is invoked with the rate parameters embedded in the URL. Based on Carriers' business rules, the rates and their service option charges for all Carriers/Services are calculated from each respective Carrier's zone data, service/delivery time data and rate data.
- [0247] The System keeps the Carrier data up-to-date in the System database 22. The application does not use any carriers' Application Program Interface (API) functions to get the rate information. All of carrier rate data is stored in the System database 22 and all business rules to calculate the rates are implemented within the System.
- [0248] FIGS. 43, 44a through 44b, and 45 are high level data retrieval and logic flow diagrams depicting the data and high level logic that the system uses to calculate a shipping rate. As depicted in FIG. 43, the following shipping information is used to calculate a shipping rate: Origin postal code, Destination postal code, Weight, Packaging, Drop off / Pickup, Country code 3001. For each Carrier 3002, the rating component of the System uses the origin and destination postal codes 3003. The rating component of the System obtains 3003 the zone id from the zone table 3008 and gathers 3004 the time for deliveries for all available services from the service delivery time table 3009. From the rate table 3010, the rating component obtains services charges for the zone ID, packaging type and weight 3005. For each service, the rating component gathers all possible service options charges 3006. After gathering necessary information, the rating component returns an array of rate information 3007. Each element in the array represents a Carrier/Service and

consists of service charge, service option charges, and delivery times.

- [0249] The System calculates the rates according to the following overview logic as depicted in FIGS. 44a–44b. The System retrieves all rate IDs (published, net, and retail) by joining the following database tables on the System's AccountNo: AccountAndCarrierAcnt; CarrierAccount; RateDefinition 3020.
- [0250] The System then determines the billing rules for all of the Carrier/Service combinations and their service options by joining the following tables on CarrierID, ServiceID, and ServiceOptionID: BillingOption; BillingOptionAndService; BillingOptionAndServiceOption 3021.
- [0251] For each carrier 3022, the System performs the following procedures: 1) determine if the particular carrier supports the given billing option based on step 2 3026. If not, continue with the next carrier 3027; 2) Apply carrier business rules, including: a) Calculate dimensional weight 3023; b) Determine billable weight 3024: actual weight, dimensional weight, oversize weight or letter weight; c) Validate package weight and dimensions 3025; (If the rate input violate carrier business rules 3026, continue to next carrier 3027); 3) Determine the zone ID from CarrierZone table for the given origin/destination postal codes 3028; 4) Determine service delivery times 3029 (including Saturday/Sunday delivery times) by joining the following tables on destination postal code: a) CarrierDeliveryArea; b) CarrierServiceDelTime; 5) Determine all service charges from CarrierRate table by RateID, ZoneID, ServiceID and Weight 3030; 6) Determine the service option charges for each Carrier/Service 3031 by joining the following tables on CarrierID and ServiceID: ServiceOption; ServiceOptionAttribute ServiceAndServiceOption; and 7) Apply billing option to service option charges 3032 (different service option charges could be billed to different parties for various billing options).
- [0252] As depicted in FIG. 45, the expected delivery times for each Carrier/Service returned in the rate information determine the placement of the rate grid for the particular Carrier/Service cell: the delivery date determines the columns 3040 while the delivery time resolves the rows 3041. In the event that multiple rate entries collide 3042, the alphabetical order of the particular Carrier's name is further used to determine the Graphic Array entry order within the same date and time bucket

3043. The same Carrier/Service can be placed in a second time slot in the grid under Saturday or Sunday column 3045 if the Saturday or Sunday delivery is applicable to the particular Carrier/Service 3044.

[0253] d.) Generating the Graphic Array

[0254] FIGS. 46a through 46c are simplified flow diagrams depicting the initial Timing and Rating procedure to generate a Graphic Array in an exemplary embodiment of the invention. In the embodiment of the invention depicted in FIGS. 46a through 46c, the functions of the Shipper entering shipping information 1150, displaying errors to the Shipper that insufficient shipping information has been provided and prompting the Shipper for additional information 1153, and displaying the Carrier/Service rate and time graphic 1160, are all processed by the Web Browser at the Client. In the embodiment depicted, all other functions and processes depicted in FIGS. 46a through 46c are performed by one or more of the System Servers.

[0255] It should be noted that the depicted separation of functions between the Web Browser at the Client on the one hand and the System Servers on the other hand represents an initial procedure to construct the Graphic Array in response to initial Shipper input of Shipper Parcel Specifications. As is explained in more detail below, after the initial construction of the Graphic Array, the System can distribute certain of the functions for supplemental regeneration of the Graphic Array to the Web Browser Client.

[0256] As depicted in FIG. 46a, the Shipper (User) enters shipping information (Shipper Parcel Specifications) 1150. The System validates the shipping information 1151.

[0257] In the embodiment depicted, at a minimum, the System requires Source Postal Code, Destination Postal Code, Parcel Weight, Type of Shipment, and the Shipping Location in order to determine a timing schedule and rates for each supported Carrier. If the Shipper has not provided at least these minimum specifications, then the System displays error messages 1153 prompting the Shipper to input further Shipper Parcel Specifications 1150.

- [0258] If the Shipper has supplied the minimum required specifications, then the System accesses the Shipper Database 1195 to identify any user-specified Carrier designations and to determine the Carrier accounts for the appropriate Shipper 1154. Using the Shipper Parcel Specifications, the System then accesses the Carrier Databases (1404a through 1404n) and determines all possible Carrier/Services that support shipping of the subject parcel 1155.
- [0259] It should be noted that in the Enterprise Shipping environment, an Administrator can restrict the identity of Carriers available to be used in the construction of the Graphic Array.
- [0260] The System then examines each Carrier/Service in the set of supporting Carrier/Services 1156. The next step 1157 is a juncture for return of control from a number of points in the System logic and is performed for each Carrier/Service in the set of supporting Carrier/Services.
- [0261] If the System has examined all possible supporting Carrier/Services 1158, the System assembles the Graphic Array from the delivery rate set 1159 and displays the Graphic Array to the user 1160. As was previously explained, the dimensions of the Graphic Array are dynamic. As long as there are further Carrier/Services that remain to be examined in the set of supporting Carrier Services, the System continues to perform the process described below. Using the Expected Shipping Date, the System switches the Carrier/Service's shipping timespan into possible delivery dates and times 1161.
- [0262] Next 1162 as depicted in FIG. 46b, the System determines whether the shipping timespan ends on a Saturday 1163. If so, the System accesses the Carrier Database (1404a through 1404n) to determine whether the particular Carrier/Service supports Saturday Delivery 1164. If the particular Carrier/Service does not support Saturday Delivery, then the particular Carrier/Service is eliminated 1177 from the delivery rate set and the System proceeds with the next Carrier/Service in the delivery rate set 1157.

- [0263] If the particular Carrier/Service supports Saturday Delivery, the System determines the appropriate Saturday delivery rate for the particular Carrier/Service 1165.
- [0264] Next, the System determines whether the shipping timespan ends on a Sunday 1168. If the shipping timespan ends on a Sunday, the System accesses the Carrier Database (1404a through 1404n) to determine whether the particular Carrier/Service supports Sunday delivery 1166. If the particular Carrier/Service does not support Sunday delivery, then the particular Carrier/Service is eliminated from the delivery rate set 1177 and the System proceeds with the next Carrier/Service in the delivery rate set 1157.
- [0265] If the particular Carrier/Service supports Sunday Delivery, the System determines the appropriate Sunday delivery rate for the particular Carrier/Service 1167.
- [0266] The System then determines whether there is a business day delivery within the shipping timespan 1169. If so, the System accesses the Carrier Database (1404a through 1404n) to determine whether the particular Carrier/Service supports business day delivery 1170. If the particular Carrier/Service does not support business day delivery, then the particular Carrier/Service is eliminated from the delivery rate set 1177 and the System proceeds with the next Carrier/Service in the delivery rate set 1157.
- [0267] If the particular Carrier/Service supports business day delivery, the System determines the appropriate business day delivery rate for the particular Carrier/Service 1171.
- [0268] The System next determines whether the Shipper has requested E-Mail delivery notification 1172. If so, the System accesses the Carrier Database (1404a through 1404n) to determine whether the particular Carrier/Service supports E-Mail delivery notification 1173. If the particular Carrier/Service does not support E-Mail delivery notification, then the particular Carrier/Service is eliminated from the delivery rate set 1177 and the System proceeds with the next Carrier/Service in the delivery rate set 1157.

- [0269] If the particular Carrier/Service supports E-Mail delivery notification, the System adds the appropriate charge for the E-Mail delivery notification service to each of the particular Carrier/Service's delivery rates 1174.
- [0270] The System then determines whether the Shipper has requested verbal delivery notification 1175. If so, the System accesses the Carrier Database (1404a through 1404n) to determine whether the particular Carrier/Service supports verbal delivery notification 1176. If the particular Carrier/Service does not support verbal delivery notification, then the particular Carrier/Service is eliminated from the delivery rate set 1177 and the System proceeds with the next Carrier/Service in the delivery rate set 1157.
- [0271] If the particular Carrier/Service supports verbal delivery notification, the System adds the appropriate charge for the verbal delivery notification service to each of the particular Carrier/Service's delivery rates 1178.
- [0272] Next 1179 as depicted in FIG. 46c, the System determines whether the Shipper has requested that the Carrier/Service guarantee delivery time 1180. If so, the System accesses the Carrier Database (1404a through 1404n) to determine whether the particular Carrier/Service supports guaranteed delivery times 1181. If the particular Carrier/Service does not support guaranteed delivery times, then the particular Carrier/Service is eliminated from the delivery rate set 1177 and the System proceeds with the next Carrier/Service in the delivery rate set 1157.
- [0273] If the particular Carrier/Service supports guaranteed delivery times, the System adds the appropriate charge for the guaranteed delivery times service to each of the particular Carrier/Service's delivery rates 1182.
- [0274] The System then determines whether the Shipper has requested a "Call for Pickup" shipping location 1184. If so, the System accesses the Carrier Database (1404a through 1404n) to determine whether the particular Carrier/Service supports "Call for Pickup" services 1185. If the particular Carrier/Service does not support "Call for Pickup" services, then the particular Carrier/Service is eliminated from the delivery rate set 1177 and the System proceeds with the next Carrier/Service in the delivery rate set 1157.

[0275] If the particular Carrier/Service supports "Call for Pickup" services, the System adds the appropriate charge for the "Call for Pickup" service to each of the particular Carrier/Service's delivery rates 1186.

[0276] The System next determines whether the Shipper has requested a "Residential Delivery" 1187. If so, the System accesses the Carrier Database (1404a through 1404n) to determine whether the particular Carrier/Service supports "Residential Delivery" services 1188. If the particular Carrier/Service does not support "Residential Delivery" services, then the particular Carrier/Service is eliminated from the delivery rate set 1177 and the System proceeds with the next Carrier/Service in the delivery rate set 1157.

[0277] If the particular Carrier/Service supports "Residential Delivery" services, the System adds the appropriate charge for the "Residential Delivery" service to each of the particular Carrier/Service's delivery rates 1189.

[0278] The System then determines whether the Shipper has requested "Loss Protection" services 1190. If so, the System accesses the Carrier Database (1404a through 1404n) to determine whether the particular Carrier/Service supports "Loss Protection" services 1191. If the particular Carrier/Service does not support "Loss Protection" services, then the particular Carrier/Service is eliminated from the delivery rate set 1177 and the System proceeds with the next Carrier/Service in the delivery rate set 1157.

[0279] If the particular Carrier/Service supports "Loss Protection" services, the System calculates the appropriate charge for the "Loss Protection" service and adds the appropriate charge to each of the particular Carrier/Service's delivery rates 1193 before proceeding with the next Carrier/Service in the delivery rate set 1157.

[0280] In the exemplary embodiments of the invention described here, the System automatically and dynamically regenerates the display of the Graphic Array and certain portions of other screens when the Shipper makes online changes to Shipper input. To do this, the System generates executable code which it distributes with certain displayable frames to the Web Browser Client. This distribution of code for purposes of regenerating the Graphic Array differs from the initial generation of the

Graphic Array as was described above. For example, in the embodiment of the invention depicted in FIGS. 46a through 46c, in the initial development of the Graphic Array, the System distributes the functions that initially generate the Graphic Array as follows: the Shipper entering shipping information 1150, displaying errors to the Shipper that insufficient shipping information has been provided and prompting the Shipper for additional information 1153, and displaying the Graphic Array 1160, are all processed by the Web Browser at the Client; all other functions and processes depicted in FIGS. 46a through 46c are performed by one or more of the System Servers 20a-21z as shown in FIG. 3.

[0281] Distribution to the Web Browser Client by the System of executable code that regenerates the Graphic Array provides the capability to dynamically reflect in the Graphic Array any changes that the Shipper may enter to the various Shipper Parcel Specifications; the Graphic Array immediately displays the new information without requiring the Shipper to request a recalculation, such as by clicking on a "Regenerate" button or the like.

[0282] To facilitate regeneration of the Graphic Array, the System generates executable code which it distributes with the frame, such as the frame that is displayed to the user for collecting the Parcel Specifications, to the Web Browser Client. A displayable frame is a set of information for display on the client display device. For example, in FIG. 42, in one embodiment of the invention, a first frame of the screen depicted in FIG. 42 comprises the Title "Rates & Times" 1109a, the instruction "Click on the price to select a delivery date, time and carrier." 1109b, the legend "Date you expect to ship your package:" 1109c, the input field for the Expected Shipping Date 1060, the legend "I'll ship the package from:" 1109d and the input field for the Shipping Location 1066; a second frame of the screen depicted in FIG. 42 comprises the Graphic Array.

[0283] As the System generates the display of each frame, the System generates executable code which it distributes with, e.g., the Rate & Times frame, to the Web Browser Client. Thereafter, the Web Browser Client uses the executable code to automatically regenerate the display of the Graphic Array each time the Shipper makes changes to the Shipper Parcel Specifications. In one embodiment of the dynamic regeneration aspect of the invention, the executable code distributed to

the Web Browser Client uses JavaScript.

- [0284] In some cases, the executable code sent to the Web Browser Client provides the information and the capability to regenerate the Graphic Array without any further communication with the Server. In other cases, the Web Client Browser must return control to the Server so that the Server can access data maintained by or accessible by the Server; the Server then regenerates the Graphic Array or otherwise provides the Web Browser Client with the information necessary to regenerate the Graphic Array.
- [0285] In an exemplary embodiment of the automatic dynamic regeneration aspect of the invention, the executable code distributed to the Web Browser Client contains the logic to apply Carrier Rules to Shipper Parcel Specification changes. For instance, Shipper changes to certain Service Options, would be automatically processed by the Web Client Browser and the Web Client Browser would regenerate the Single Day Rate Graphic Array depicted therein to reflect the Shipper changes. In one such automatic dynamic regeneration embodiment, only those functions that do not require further access to the relevant Carrier's database are distributed to the Web Browser Client.
- [0286] It should be noted that, according to the automatic dynamic regeneration aspect of the invention, if after the Shipper views the Graphic Array the Shipper enters changes to any of the factors with which the System calculates the rates and develops the Graphic Array, the System uses a similar logic flow to regenerate the Graphic Array as was explained above in relation to FIGS. 46a through 46c.
- [0287] The dynamic regeneration capability is used to automatically regenerate response screens in many places throughout the System. For instance, if the Shipper changes Origin Zip Code 149 (FIG. 25) and/or Ship Location Type (as selected via 281, FIG. 25), the System will automatically regenerate a list of possible Drop Off Location choices.
- [0288] e.) *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*
- [0289] *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*

[0290] 9.Payment Methods.

[0291] The System provides the User with choices of payment methods for paying for the shipping transaction. Payment methods include, for example:

[0292] -Bill Sender (Bill Department)

[0293] -Bill Recipient

[0294] -Bill 3rd Party

[0295] -Bill Credit Card (Yellow Freight only)

[0296] The System Enterprise Desktop Client captures supplementary billing information supported by the carriers, on both a package- and shipment-level basis, such as:

[0297] -Shipper's Reference 1

[0298] -Shipper's Reference 2

[0299] The user interface, *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]* assist the user with completing payment methods, where possible, such as, for example, in the following ways:

[0300] -For the Bill Sender option, the appropriate account number for the user is automatically assigned by the System.

[0301] -For the Bill Recipient option, the account number is auto-filled by the System from address book if available.

[0302] -The User Interface collects addresses if required for the payment method.

[0303] *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*

[0304] Communications between the User's browser and the System are encrypted to protect carrier account numbers and credit card numbers.

[0305] 10.Service Availability.

- [0306] The System provides each Enterprise with access to the full spectrum of carriers and services supported by the System.
- [0307] Certain service types drive additional user interface requirements, such as freight requiring different dialogs to complete the shipping transaction.
- [0308] *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*
- [0309] 11. Label printing.
- [0310] Users *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]* can laser print carrier shipping labels after consummating a shipping transaction for all carriers with whom the User has label printing permission. *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]* Users can print "traveler" labels, which help identify pre-processed packages for mailroom personnel to complete.
- [0311] *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*. The traveler label includes a bar code that, when scanned, enables quick retrieval of the shipment record from the System by mailroom personnel using the Ship Station client.
- [0312] Both shipping labels and traveler labels include user instructions on what to do with the package once the label has been printed.
- [0313] Shipping Stations must be equipped and configured with a bar code scanner to read traveler label bar codes in order to enable the quickest retrieval of shipment data from the System.
- [0314] a.) Generating a System Tracking Number
- [0315] If the User creates a Shipping Label such as is depicted in FIG. 52, the System prepares a Carrier shipping tracking number 330 and an internal System tracking number for the item package.

[0316] A System tracking number is a unique number generated internally by the System to identify a particular package shipped using the System. The Shipper inputs the Shipper's Parcel Specifications for the Subject Parcel. Using each Shipper's Parcel Specifications, the System is programmed to access databases containing information about each supported Carrier. Each supported Carrier has a unique rating schedule, delivery and pickup rules and schedules, and certification requirements (the "Carrier Rules"). The System is further programmed to apply each supported Carrier's Rules to each Shipper's Parcel Specifications for the corresponding Subject Parcel.

[0317] As a result of the Consumer creating a shipping label, the System assigns the package a System package tracking number and adds a record containing all of the pertinent information about the package to the System database 22. Following are exemplary Shipping tracking numbers: MAGGY841VRY50; MAGGY84B496RF; MAGGY84X0FJ45.

[0318] In one embodiment, the System Tracking Number is based on a Base-33 number system. The characters available are: Zero (0) through nine (9) and A through Z excluding "I" (i), "L" (l), and "O" (o). Each letter represents a value, as depicted in the table below:

[0319] A = 10 F = 15 M = 20 S = 25 X = 30

[0320] B = 11 G = 16 N = 21 T = 26 Y = 31

[0321] C = 12 H = 17 P = 22 U = 27 Z = 32

[0322] D = 13 J = 18 Q = 23 V = 28

[0323] E = 14 K = 19 R = 24 W = 29

[0324] Each System Tracking Number is 13 alphanumeric characters. Position 1 is the letter 'M'. Positions 2 - 7 are a System Account number. Positions 8 - 12 are a five-digit ID. Position 13 is a Check Digit.

- [0325] To calculate the Check Digit, the System performs the following steps: 1) Consecutively multiply the numeric value of each of positions 2-7; 2) Consecutively multiply the numeric value of each of positions 8 - 12; 3) Add both results; 4) Divide by 31; 5) Convert the remainder value to a Base-33 number. The converted value is the Check Digit.
- [0326] b.) Printing a Shipping Label.
- [0327] As mentioned above, in some embodiments, the Shipper can use the System to locally print on the Shipper's printer device a bar-coded shipping label according to the Selected Carrier's certification standards. In some embodiments, the bar-coded shipping label, including two dimensional bar code labels, and other types of shipping labels, can be printed on either a thermal label printer or on a laser printer. The Shipper specifies the type of printer to the system during initial setup procedures. Thereafter, the System uses, as appropriate, the thermal printer or laser printer module to prepare the label image for printing on the Shipper's printer.
- [0328] FIG. 53 depicts a flow diagram of one exemplary embodiment of the aspect of the invention that provides printing of bar-coded shipping labels on printer devices which are compatible with the User's client system on which a web browser is running, such as an HP-compatible laser printer. As depicted in FIG. 53, one of the System Servers, for instance, the Shipping Server, e.g. 21s in FIG. 3, gets the Label Size from the Carrier Label Specification 1250, the Label Layout from the Carrier Label Specification 1251, Label Data from the Shipper Database 1252, and the Label Quality in Dots Per Inch (DPI) as set by the Server 1253, and uses this information to Generate the Label 1254.
- [0329] The Server then creates, and causes the display on the client browser's display device of, a text string with a specified font face and in a specified font size in an HTML table data cell with a specified width 1255. If the client browser is using a ninety-six (96) display device DPI, the display device will display said text string in the HTML table data cell in a single line. If on the other hand, the client browser is using a one hundred twenty (120) display device DPI, the display device will display said text string in the HTML table data cell in two lines.

- [0330] In creating the display of the text string, the Server also sends a message to the Shipper asking the Shipper to answer the following question: do you see the text string displayed on your screen as a single line or as wrapped text in multiple lines? The Server receives the Shipper's response and determines from the response whether the Shipper's display device has displayed the text as a single line or as wrapped text in multiple lines 1256. If the text is displayed as a single line, then the client browser 1257 display device DPI is 120. Otherwise, the client browser 258 display device DPI is 96.
- [0331] Next, the Server calculates the shipping label HTML image size in pixels 1259 by multiplying the Carrier-specified label size from the Carrier Label Specification times the client browser display device DPI as determined by the previous step.
- [0332] Next, the System displays the generated label image in the client browser 1260 with an HTML image tag and an HTML image size in pixels as calculated in the prior step. The client browser calculates the size of the label to be printed in inches by dividing the label HTML image size in pixels as calculated in a prior step by the client browser display device DPI 1261; the client browser then prints out the label with the size calculated 1261.
- [0333] FIG. 54 depicts a flow diagram of an exemplary embodiment of the aspect of the invention that provides printing of dimensionally accurate images, such as dimensionally sensitive symbologies including two-dimensional bar codes and other two-dimensional machine-readable symbologies. This aspect of the invention provides the printing of such dimensionally accurate images on various types of printer devices including among others HP-compatible laser printers. The printer devices can be configured with remote computers, such as PC's, that will receive signals to print the dimensionally accurate image over a communications network such as the Internet. Each PC having a client browser or executing like software, and each PC being configured with a pre-established Image Resolution that applies to the display device and the printer device configured with the PC.

- [0334] As depicted in FIG. 54, the System determines the Image Size 1350, the Image Layout 1351, any relevant Image Data 1352, and the Image Resolution in Dots Per Inch ("DPI") or in any other measure of Image Resolution 1353. The System uses this information to generate the Image 1354.
- [0335] Alternatively, the Image has previously been created; the System determines from the Image, the Image Size 1350, the Image Layout 1351, any relevant Image Data 1352, and the Image Resolution in DPI or in any other measure of Image Resolution 1353 (collectively referred to hereinafter as the "Image Characteristics").
- [0336] The System determines the possible Image Resolution Categories and associated values of client PC's 1354. Image Resolution Categories and associated values include information such as the number of text strings, and the length of and characteristics (font face, font size, and HTML table cell width) of each of the identified number of, text strings that must be used to determine the Image Resolution of client display devices 1356.
- [0337] An HTML table cell width is fixed in that the physical width of the display of the HTML table cell does not change depending upon the resolution of the client device; a text string comprised of characters having a particular font and font size has a scalable width, depending upon the resolution of the client device resolution. Use of an HTML table cell to measure the resolution of client devices is not a limitation of the invention. In an alternative embodiment, a graphic element other than an HTML table cell, having a fixed width, is used to measure the resolution of client devices.
- [0338] The possible Image Resolution Categories and values are stored in the memory of the System or in a database table and updated on some basis. In an alternative embodiment, the possible Image Resolution Categories and values are input into the System.
- [0339] The System then analyzes the Image Characteristics, and the possible Image Resolution categories and/or values 1355, and creates the appropriate number of text strings and associated HTML table cells 1356. Each text string is created to have a specified font face, a specified font size, and an associated HTML table cell with a specified width. The computer then causes the display of the text strings in

the associated HTML table cells on the remote client PC's display device 1358.

[0340] In creating the display of the text string, the System also sends a message to the recipient PC asking the user to answer the following question: is the first text string displayed on your screen as a single line or as wrapped text in multiple lines? The System receives the remote User's response and determines from the response whether the remote User's PC's display device has displayed each of the text strings as a single line or as wrapped text in multiple lines (e.g., 1256-1258, FIG. 53). The System then sets the PC's Remote Image Resolution for printing the Image 1359 according to the results of the User's PC's display of the text strings. Next, the System calculates the Remote HTML Image Size in pixels 1360 by multiplying the Image Size times the PC's Remote Image Resolution as determined by the previous step. Next, the System displays the generated image on the display device of the remote PC 1361 with an HTML image tag and the Remote HTML Image Size in pixels as calculated in the prior step.

[0341] The client browser of the remote PC calculates the size of the Image to be printed ("Remote Print Image Size") in inches by dividing the Remote HTML Image Size in pixels by the Remote Image Resolution 1362; the client browser then prints out the Image with the Remote Print Image Size 1362.

[0342] In one embodiment of the invention, instead of printing a shipping label at the Shipper's printer, a Package Number is displayed online on a Package Number Screen with notification that the label will be printed at a shipping location previously designated by the Shipper.

[0343] c.) Printing a Traveler Label

[0344] *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*. In some cases, a particular Desktop User may decide to not finalize shipping and delegate the actual shipping to some other user within the Enterprise. For example, if the Desktop User is not certain of the weight of a package, the Desktop User, even if that user has shipping label printing privileges, may decide to print a traveler label, attach the traveler label to the package, and forward the package to a Shipping Station User to complete shipping.

[0345] FIG. 55 is a high level System interactivity data and logic flow diagram depicting an exemplary embodiment of the process by which the System completes the information necessary to ship a package in an exemplary embodiment of the System using traveler labels delivered to a Shipping Station. The User enters package and shipping information 335 which is stored in the System databases 336. The User requests printing of a traveler label, which the System prints on a printer local to the User 340. The User delivers the package together with the traveler label to the Shipping Station. The Shipping Station then scans in the Traveler Label 341 in order to retrieve the package and shipping information from the System's databases 342-344 to populate the shipping information necessary to rate the shipment and finalize the shipping process and complete a shipping label 345-351. This application is used, for example, where Desktop Users have no way of weighing each package.

[0346] FIG. 56 is a graphic representation depicting an exemplary Traveler Label in an exemplary embodiment of the invention. As depicted in FIG. 56, a Traveler Label reports Shipping Addresses 363, Package Information Details 364, and an instruction to take the package to the appropriate shipping counter 361. Further, the Traveler Label provides a System Tracking Number 362 and a bar code label 360. When the User delivers the package together with the traveler label as depicted in FIG. 56 to the appropriate Shipping Station, personnel at the Shipping Station scans the bar code 360 in the Traveler Label in order to retrieve the package and shipping information, e.g. 363 and 364, from the System's databases. As was described above in relation to 345-351 depicted in FIG. 55, the System uses the retrieved package and shipping information, e.g., 363 and 364, to populate the shipping information necessary to rate the shipment and finalize the shipping process and complete a shipping label.

[0347] FIG. 57 is a graphic representation depicting an exemplary Shipping Request Confirmation Screen in an exemplary embodiment of the invention. As depicted in FIG. 57, the Shipping Request Confirmation Screen displays a message indicating a successful shipping request and providing directions for next steps 370. The Shipping Request Confirmation Screen further displays Shipping information details, e.g., 371 and a summary of shipping charges and service options, e.g., 372. In one

embodiment, the Shipping Confirmation Screen provides Request Carrier Pickup and Cancel Carrier Pickup onscreen buttons with which the user can electronically request or cancel Carrier pickup of the package being shipped.

- [0348] 12. *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*
- [0349] *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*
- [0350] 13. *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*
- [0351] *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*
- [0352] 14. Notifications.
- [0353] The System Enterprise Desktop Client initiates notifications to the parties participating in each shipping transaction, including, for example:
- [0354] -Notify recipient (plus up to two others) of shipment initiation, with tracking number and link to Track It. The sender shall be able to add text to a notification.
- [0355] -Notify sender (plus up to two others) of delivery (Shipment confirmation.)
[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]
- [0356] -Notify sender and recipient (plus up to two others) of carrier shipment pick-up. *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*
- [0357] The System generates e-mails with summary information about the event, and with links to the System for detailed event information. Web links embedded in e-mail notifications take users to publicly accessible areas of the System.
- [0358] *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*
- [0359] 15. End of Day Processing
- [0360] *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*
- [0361] 16. Shipping Log.

- [0362] The System provides a shipping log. The shipping log is the central point of information for a User's past, current and future shipping history. It is also the central location for Users to obtain tracking information for both inbound and outbound shipments. It provides facilities to view and manage the User's historical and ongoing shipping activities, as well as to obtain shipment tracking information. The shipping log provides various types of information, including, for example:
- [0363] -Provide summary tracking information
 - [0364] -Display shipment status (delivered, in-transit, label printed, pending, future)
 - [0365] -Display shipment type: inbound/outbound
 - [0366] -Edit shipments for pending shipments or shipments with labels (either carrier or traveler) printed but not manifested.
 - [0367] -Repeat shipment to speed processing of commonly performed shipments
 - [0368] -Delete shipments for pending shipments, shipments with labels printed (cancel shipment), or historical shipments (actually, hide shipment)
 - [0369] -Search shipping history (by recipient, by carrier, by service type, by date, by status)
 - [0370] -Sort shipping history (by recipient, by carrier, by service type, by date, by status)
 - [0371] -The user can control the page size of the shipping log, up to a maximum of 100.
 - [0372] -The User Interface uses tabs in order to display different shipment statuses (i.e. pending or historical) and to improve database performance.
 - [0373] *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*
 - [0374] The shipping log displayable to individual Users is for their personal shipping history.
 - [0375] *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*

[0376] A Shipping Station can display status for shipments that have a traveler label printed but no carrier label and which are related to that Shipping Station.

[0377] 17. Inbound Package Tracking.

[0378] The System provides the capability to track inbound packages sent by other System users. In an Internet embodiment of the invention, this is the case whether the Shipping System User is a non-Enterprise Recipient or is an Enterprise User in the same or different Enterprise as the Receiving System User. Shipping requests submitted to the System provide, among other things, the Recipient's e-mail address. The System recognizes the Recipient as a System User by checking the e-mail address of every Recipient. If the Recipient is a System User, the System adds the Shipping Request to the Recipient's Inbound Tracking Log and notifies the Recipient the next time the Recipient logs on to the System.

[0379] The System provides Users with the capability to view the status of inbound packages separately from outbound packages. Inbound packages sent by other System Users should appear in the shipping log automatically.

[0380] 18. Other Tracking Capabilities

[0381] The shipping log user interface enables tracking reporting, including, for example:

[0382] -Outbound packages:

[0383] -Shipped packages automatically move to the log for tracking

[0384] -A separate tracking window is available for entering tracking numbers generated outside of the system

[0385] -View high-level tracking status (default), or

[0386] -View detailed tracking status.

[0387] The System provides complete tracking and reporting capabilities for packages shipped through it, and for packages for which a Carrier tracking number is known as described below.

[0388] FIG. 58 is a graphic representation of an exemplary Track It application 380 Track a Shipment Screen in an exemplary embodiment of the invention. As depicted in FIG. 58, the User enters one or more Tracking Numbers in the Tracking Number fields, e.g., 381a-381e and clicks the Submit button 382 to track one or more packages.

[0389] In one embodiment, the Track It application navigation bar provides Track a Package, Track All Packages, Track Pending Packages, Track Shipped Packages, Track Inbound Packages and Perform End of Day options. If the User has the authority to ship packages on behalf of another user, the Track It Navigation Bar also provides a View History option with which the User can specify the Shipped For User's ID in which case the Track All Packages, Track Pending Packages, Track Shipped Packages, and Track Inbound Packages options will display packages shipped for the specified User.

[0390] FIG. 59 is a graphic representation of an exemplary Tracking Results Screen in an exemplary embodiment of the invention. The Tracking Results Screen depicts summary report entries for multiple packages 390. Each summary report entry reports, among other things, a status logo, e.g., 391-1a, 391-2a, depicting the status of the reported item, and the System Tracking Number for the item, e.g., 391-1b, 391-2b. Status logos are used to indicate, e.g., Shipped 392-1, In Transit 392-2, Delivered 392-3, and Exception 392-4. FIG. 60 depicts a package reporting an exception status 391-5a through 391-5c.

[0391] FIG. 61 is a graphic representation of an exemplary Unable to Track Screen in an exemplary embodiment of the invention. As depicted in FIG. 61, a tracking number entered by the User for tracking that is not recognized by the System or any of the Carriers is reported. The System reports the User input tracking number 430, provides the User with a Tracking Number window 431, asks the User to specify the Carrier 432-1 using a Carrier drop down menu button 432-2 and to specify the ship date 433. The User clicks the Submit button 434 to submit the tracking request.

[0392] FIG. 62 is a graphic representation depicting an exemplary Tracking Information Screen in an exemplary embodiment of the invention. As depicted in FIG. 62, the Tracking Information Screen displays detailed information about the shipment status 395. The Tracking Information Screen provides a link with which the User can request further details about the package 396. The Tracking Information Screen also provides a link 397 allows the User to add the Tracking Number to the User's Inbound Tracking Log. The Tracking Information Screen depicted in FIG. 62 further provides the User with instructions 398 for sending the URL of the tracking information to various e-mail recipients, e.g., 399-1a - 399-1b, and 399-2a - 399-2b, with a message 400. The User can choose to send the URL of the tracking information 402 and/or to send notification when the package is delivered 401. In one embodiment, the Tracking Information Screen provides a Repeat Shipment button. Clicking the Repeat Shipment button will take the User to a Ship It screen and cause the system to pre-populate the shipment and package data fields with the information from the previously shipped package.

[0393] FIG. 63 is a graphic representation of an exemplary Shipping History Screen in an exemplary embodiment of the invention. In the exemplary Shipping History Screen depicted in FIG. 63, the System provides the User with Track It Navigation options to view Pending 405, Outbound 406 or Inbound 407 packages. The User can specify the Status 408, and/or Ship To Name 409, or Ship Date 410. Clicking the Update button 414 will cause the System to display the History Summary report entries that meet the User's specified reporting criteria.

[0394] Each history entry report Status 425, Ship To Name 424, number of packages 426, System Tracking Number 423, Carrier/Service 422, Ship Date 421, and Delivery Date 420. The User can click on any of Status 425, Ship To Name 424, System Tracking Number 423, Carrier/Service 422, Ship Date 421, or Delivery Date 420 to sort the contents of the screen display according to the option clicked.

[0395] Each Shipping History entry, e.g., 416, provides an associated tracking checkbox, e.g., 415. To get detailed tracking information for one or more items reported, the User clicks the tracking checkbox for each of the items to be tracked and then clicks the Track It button 418. The User can view the Previous items 411,

the currently displayed items 412, or the next items 413 in the Shipping History List.

- [0396] Users may perform "batch tracking", i.e. select more than one shipment and track on those shipments. This will improve system performance when the user has up to 100 "trackable" shipments in their log. Users will also be able to track "all."
- [0397] Referring to FIG. 3, when a Shipper/User ships a package using the System, one or more of the System's Servers, e.g., 21s-21z create a new System tracking number. When a new System tracking number is created, one of the System's Database Servers, e.g., 20a-20n, adds a new package record with the newly created System tracking number to a Package Table 28.
- [0398] The Package Table 28 resides in the System database 22 and contains package records for System processed packages. An exemplary embodiment of the Package Table contains the following information: 1) Package Tracking State ID; 2) Package Shipping State ID; 3) Actual Delivery Time; 4) Delivered To information; 5) Shipping Date; 6) Carrier Tracking Number; 7) System Tracking Number; 8) Carrier ID; 9) Actual Package Weight; 10) Service Description; and 11) Package OID. The content of these fields are described further below.
- [0399] The Package Tracking State ID specifies the tracking state of the package. In an exemplary embodiment of the invention, there are four different tracking states: 1) Null (New Packages or Shipped Packages); 2) Manifested (at the end of each day, package information is moved to the Package History Table for tracking purposes); 3) In Transit (The Carrier has picked up packages); 4) Delivered (Packages have been delivered to the shipping destination).
- [0400] The Package Shipping State ID specifies the shipping state of a package. In an exemplary embodiment of the invention, there are two different shipping states: 1) Shipped (New Packages or Shipped Packages); 2) Manifested (at the end of each day, package information is moved to the Package History Table for tracking purposes).

[0401] The Actual Delivery Time specifies the Date/Time that the package was actually delivered. The Delivered To information identifies the person or place to which the package was delivered (e.g., left with receptionist, receptionist front desk, or guard). The Ship Date specifies the date on which the Carrier picked up the package. The Carrier Tracking Number identifies the Carrier-specific package tracking number. The System Tracking Number specifies the unique Package tracking number internally generated by the System (each System tracking number corresponds to exactly one Carrier-specific tracking number). The Carrier ID specifies an identification code for the particular Carrier. The Actual Package Weight specifies the actual weight of the package as opposed to the billed weight. The Service Description describes the type of services used to ship the package e.g., Overnight, 3 Day Ground, Second Day Air, etc. The Package OID contains a Globally Unique Identifier (GUID) for each package.

[0402] When the System creates a new package record, the record remains in the Package Table 28 during an initial period of time, for example, the first day during which the record is created, so that the Shipper/User can modify information about the package or void the package record as appropriate. In an exemplary embodiment of invention, the System performs certain processing on a periodic basis, such as at the end of each business day. This type of processing is referred to herein as "End Of Day" processing. In an exemplary embodiment of the invention, during "End Of Day" processing, the System removes all new package records from the Package Table 28 and moves the records to a Package History Table 29 which also resides on the System Database 22. In an exemplary embodiment, Package History Table 29 records contain the same data fields as described above regarding Package Table 28 records.

[0403] FIG. 64 is a graphic representation of a Shipper online user input screen that is displayed on the Shipper's display screen 10 (FIG. 2). If a Shipper/User wants to track a particular package, the Shipper/User enters the tracking number that identifies the particular parcel package of interest in the "Enter tracking number" field 2035. It should be understood by someone with ordinary skill in the art that the User may be someone other than the Shipper. For instance, the User may be a Recipient who wishes to track a package being sent to the user. Once the User has

entered a tracking number, the User submits a request to track the particular package identified by clicking on the Submit button 2036.

[0404] FIG. 65 is a logic flow diagram that depicts the high level logic for tracking the status of a particular package. The User enters 2018a and 2018b a tracking number 19 in the tracking number field 2035 (as was shown in FIG. 64). The System first validates 2050 the tracking number 19. The System performs the validation process by attempting to access the record on the System database 22 that is associated with the tracking number 19. To do this, the System requests that a System database server, e.g., 20a (as depicted in FIG. 3) locate and retrieve the package record that is associated with the tracking number 19. The System database server, e.g., 20a, uses the entered tracking number 19 to search the System database 22 to locate and retrieve the specified package record. In one embodiment, the System database server, e.g., 20a, is programmed to perform database accesses using Sequel 7.0.

[0405] Through the validation process, the System determines whether the tracking number 19 is a System tracking number or a Carrier tracking number. Below are examples of Carrier tracking numbers.

[0406] UPS - 1Z8595610344113190

[0407] Airborne - 3918984344

[0408] FedEx - 811152682326

[0409] USPS - EJ585489546US

[0410] Yellow Freight - 2100003475

[0411] If a user enters a Carrier tracking number as the tracking number 19, then depending upon the status of the package, or the number of times that the package was tracked, there may be no information in the System database 22 for the Carrier tracking number. In such a case, the System then uses algorithms provided by each Carrier to determine the Carrier identification.

- [0412] If the System determines that there is information about the package on the System database 22, then the System analyzes the Package Shipping State. If the Package Shipping State of the retrieved record is "Manifested" or In Transit and the Package Tracking State is not "Delivered", then the System prepares to track the package using the appropriate Carrier system. If the Package Shipping State of the retrieved record is "Delivered", or other final status, then the System reports the status of the package to the user.
- [0413] If the tracking number 19 is a valid System tracking number, then the System extracts the Carrier's tracking number and Carrier's ID from the package record retrieved from the System database 22 before issuing a request 2054. Otherwise, if the tracking number 19 is a Carrier tracking number, then the System extracts the Carrier's ID from the package record before issuing a request 2052 to the Carrier's Internet system. The System uses the Carrier's ID to retrieve from the System database 22 the Internet URL for the Carrier's Internet web site. The URL information is configurable.
- [0414] Returning for a moment to FIG. 3, using the Carrier's Internet URL, the System then makes an HTTP connection to the Carrier's web server, e.g., 23-2 through 27-2, using the URL information for the particular Carrier's web server. Depending upon the Carrier, the System's 1 request and report interface with the Carrier's web server is programmed in HyperText Markup Language (HTML), Extensible Markup Language (XML), or both HTML and XML. FIG. 66 depicts an exemplary XML formatted request for submitting a tracking request to a Carrier. FIG. 67 depicts an exemplary successful tracking response, also in XML format, returned by the Carrier.
- [0415] Then, as depicted in FIG. 65, the System transmits the Carrier's tracking number over the HTTP connection (2052 or 2054). The System instructs the Carrier's web server as to what information is requested based on the connection made using the URL.

- [0416] If the Carrier's web server successfully responds 2055 to the System's 1 tracking request, the System disconnects from the Carrier's web server and parses the response data. Some Carriers' response data contains unnecessary text information. The System strips out all of the unnecessary text in order to parse the relevant information.
- [0417] If the System database 22 does not have any previous record of the package, such as would be the case if the package had not been shipped using the System shipping application, then the System does not store any data about the package in the Package Table or the Package History Table.
- [0418] Otherwise, the System then updates the System database 22 and reports the information to the Shipper/User 2056. If the package is reported as delivered, the System populates the Package History Table 29 in the System database. As was previously mentioned, in an exemplary embodiment, Package History Table 29 records contain the same data fields as described above regarding Package Table 28 records.
- [0419] If the Carrier's Internet web server returns an unsuccessful report, the System reports the failure to the User. If the Carrier's system successfully returns tracking information, then the System displays the package's current status.
- [0420] In an alternative embodiment, if the tracking number 19 is a Carrier tracking number, the Server will validate that the Carrier tracking number is a valid tracking number. If the Carrier tracking number is not a valid number, the Server will return an invalid tracking number error. If the Carrier tracking number is a valid number, the Server will not attempt to match the number to a manifested package; the Server will track the package using the particular Carrier's Internet tracking routine; and will return the tracking response to the Web Client of the requesting Shipper/User.
- [0421] In an alternative embodiment, if the tracking number 19 is a System tracking number, then the System validates the System tracking number to ensure that it is a valid System tracking number. If the System tracking number is not a valid tracking number, the Server will return an invalid tracking number error. If the System

tracking number is a valid tracking number the Server queries the System database 22 to find the Carrier tracking number which corresponds to the System tracking number. If no package record is found for the System tracking number, then the Server will return an error to the Web Client of the requesting Shipper. The error message will indicate that no package record was found; it will request the user to verify that the tracking number was from a package which had been dropped off notify the user that a package be tracked on the same day it shipped. If the package record is found and the actual ship date is the same as the current date, the Server will return an error to the Web Client of the requesting Shipper indicating that the user/Shipper cannot track the package on the same day it is shipped.

[0422] In this alternative embodiment, once the Server has identified the Carrier tracking number, the Server will track the package using the Carrier's Internet tracking routine. If the tracking response from the Carrier's Internet tracking routing indicates an error, the Server will make another attempt to track the package through the Carrier's Internet tracking routine. If the second tracking request results in an error, the Server will notify the Web Client of the requesting Shipper that the Carrier is unable to track the package, and will log a tracking request error containing the Error Log number, the System tracking number, the Carrier tracking number, the time and date the tracking request occurred, the error response reported by the Carrier, and the Account Name of the user/Shipper making the tracking request, if that information is available.

[0423] If, on the other hand, the Carrier returns a valid tracking response, the Server will update the package status in the Server Database with the tracking response and will return the detailed package information to the Web Client of the requesting user/Shipper from the System Database as described below.

[0424] If the user supplied a Carrier tracking number, the Web Client will display the basic tracking information provided by the particular Carrier's Internet tracking function. In one embodiment of the invention, when the user provides a Carrier tracking number to track a package, the user/Shipper's Web Client requires the user/Shipper to identify the Carrier.

[0425] If the user/Shipper provides a System tracking number, then if the user/Shipper is logged on to the account, or otherwise enters valid logon information, that information must correspond to the Account which shipped the package. In that case, the user/Shipper's Web Client will display the following information: System tracking number; recipient address; drop off location; Carrier and service; Carrier tracking number if available; actual ship date if available; delivery address if available; delivery location if available; delivery date if available; delivery time if available; signed for by information if available; package rate; package weight; package dimensions; packaging; customer reference information; all scan activity.

[0426] If on the other hand, the user/Shipper is not logged on to the account, fails to enter valid logon information, or is logged on to an Account which does not correspond to the Account which shipped the package, the user/Shipper's Web Client will display the following information: System tracking number; recipient contact name; recipient company name; Carrier and service; Carrier tracking number if available; actual ship date if available; delivery address if available; delivery location if available; delivery date if available; delivery time if available; signed for by information if available; package weight; customer reference information; all scan activity.

[0427] 19. *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*

[0428] *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*

[0429] 20. *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*

[0430] *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*

[0431] 21. *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*

[0432] *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*

[0433] 22. Request Carrier Pick-up

[0434] *[REDACTED FOR PUBLICATION UNDER 37 C.F.R. SECTION 1.217]*

Illustrated Embodiment

[0435] Although this invention has been described in certain specific embodiments, many additional modifications and variations would be apparent to those skilled in the art. It is, therefore, to be understood that this invention may be practiced otherwise than as specifically described. Thus, the embodiments of the invention described herein should be considered in all respects as illustrative and not restrictive, the scope of the invention to be determined by the appended claims and their equivalents rather than the foregoing description